Harveian Lectures
ON THE
MECHANICAL SYSTEM OF UTERINE PATHOLOGY.

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LECTURE I.

MR. PRESIDENT AND GENTLEMEN,—The subject which I have selected for these lectures is one which I venture to think very suitable for discussion before this Society. Great scientific interest at present attaches to all questions relating to the pathology of the uterus. We have been too long reproached for the diversity and differences of opinion prevalent on these questions, and I feel sure you will bear with me in the attempt I am now about to make to reconcile these differences and to produce some satisfactory and useful generalisations on the subject. For several years the complex subject of uterine pathology has been a principal object of my attention. Starting with no preconceived views on the subject, my sole object has been to attain to a rational understanding of the cases which presented themselves to my notice. The result of my observation and inquiry has been the adoption of certain general principles in reference to this interesting subject, which have, as I conceive, a very widely extended application, and which I shall now endeavour to lay before you. The principles in question have evolved themselves naturally and logically from the facts before me. They seemed to me of so sweeping and general a character, that at first I was distrustful of my own observation, and could hardly believe that such simplicity belonged to a subject which had always appeared so difficult; but as time went on, it was plain to me that there could be no mistake about it, and the more cases I saw, the more exactly and truly did the principles in question seem to apply themselves naturally to the observed fresh facts.

It was not until five years ago that I ventured to put forward in a succinct and positive form the conclusions which observations spread over several years had previously induced me to come to. In the third edition of my work "On Diseases of Women," these conclusions were submitted to the consideration of my professional brethren, as the basis of what I ventured to designate the "mechanical system" of uterine pathology.

The following three propositions embody these conclusions:—

"1. Patients suffering from symptoms of uterine inflammation (or, more properly, from symptoms referable to the uterus) are almost universally found to be affected with flexion or alteration in the shape of the uterus of easily recognised character, but varying in degree.

"2. The change in the form and shape of the uterus is frequently brought about in consequence of the tissues of the uterus being previously in a state of unusual softness, or what may be often correctly designated as chronic inflammation.

"3. The flexion once produced is not only liable to perpetuate itself, so to speak, but continues to act incessantly as the cause of the chronic inflammation present."[1]

Since that time nothing has occurred to shake my confidence in the substantial truth of the conclusions just stated; I have had, on the contrary, more reason than ever to be satisfied of their accuracy. But additional experience, together with the great advantage of the subjection of these conclusions to various searching, if not always favourable, criticisms, enable me now to develop the subject more completely.

There has been much misconception in reference to the word "mechanical," as used in the phrase "mechanical system of uterine pathology," a misconception which it is necessary that I should at once deal with. The word mechanical is here employed to convey an idea as to the origin and nature of the disorder. By it is meant that mechanical changes and mechanical influences have the greatest share in the production of these disorders. By it is intended to be conveyed the importance of the share which acquired distortions and alterations of position of the uterus—in a word, mechanical changes—have in the production of uterine suffering. The word mechanical has, however, apparently led some who have criticised the doctrines which I have upheld to imagine, quite unjustifiably, as I shall by-and-by show, that it has been my intention and desire to inaugurate the universal and indiscriminate employment of instruments and mechanical appliances in the treatment of uterine disease. Nothing can be farther from my intention. At present I content myself with simply pointing out that the adoption of the mechanical system of uterine pathology does not mean the use of a pessary in any and every case that presents itself. It is one thing to recognise that the patient before us is suffering from a mechanical derangement of the internal generative organs, it is another to insist on the treatment of such a case by applying various internal mechanical apparatus.

It is high time that some more rational, intelligible, and generally comprehensible ideas on the subject of uterine pathology should prevail. Knowledge has, in this department of science, been defective. The subject is one which cannot be studied on a large scale by a large number of individuals, and the great mass of the profession has felt itself obliged to accept the reigning doctrines, and apply them as they best could to the treatment of actual cases. The breakdown of one system has thus disposed many to think hardly of a new one, and to exclaim against a novelty simply because it is a novelty. I gladly avail myself of the opportunity now offered of presenting to your notice a general view of the mechanical system of uterine pathology, and of setting forth the grounds on which it claims to offer a rational interpretation of the clinical phenomena, and the pathological changes observed in cases where the uterus is diseased.

Certain of the mechanical disturbances of the uterus have been long known, their nature understood, and their inconveniences recognised. I mean those forms of prolapsus uteri where the organ, wholly or in part, and dragging with it or not portions of the adjacent organs, escapes from the vulva. There is no dispute as to the mechanical nature of such a lesion as this. The malady could not well escape recognition.

But displacements of the uterus falling short of this external protrusion were not so readily recognised, though a moment's consideration would seem to be sufficient to show that a descent or movement transgressing the normal limits would be really a displacement. In point of fact, the slighter displacements were known to exist, but were not thought much of, because no one had specifically indicated the nature of the evil effects they produced. But, besides these slighter degrees of internal displacement, another physical change of the uterus—bending or flexion of the organ—has of late years attracted much attention. It is plain that this latter is a mechanical affection, and that it must be looked at from a mechanical point of view. It is not less a dislocation than is prolapsus of the uterus.

The proper signification of these various mechanical diseases of the uterus is not yet known, nor is their relation to other diseases and alterations of the uterus as yet defined with the necessary degree of precision. Almost inconceivable differences of opinion prevail as to their nature and effects, and there are infinite differences of opinion as to their actual importance. It is my object on this occasion to attempt to render the matter more intelligible.

The importance of this or that lesion of any particular organ is usually judged of by its disturbing effect, by the pain or discomfort to which it gives rise, or by its disturbing various physiological processes essential to the preservation of health. Observation has convinced me that, as a rule, far too little attention is bestowed by practitioners on the

[1] On Diseases of Women. Third Edition. 1873.

statements and complaints made by patients as to their own painful or distressing sensations. I can only say that, in investigating supposed cases of uterine disease, I have always gained a great amount of assistance from these statements in arriving at a conclusion as to the nature of the case. Early in my practice I was led to adopt the course of questioning the patient closely in regard to their sensations. Coupling these statements with the results of careful internal exploration of the uterus, and other adjacent organs, the result was in process of time to show such a close connexion between internal mechanical changes of the uterus and the existence of painful sensations such as induced the patients to apply for relief, that I was insensibly led to attach the highest importance to this connexion. And, in fact, this is the explanation I have to give of my adoption of the mechanical system of uterine pathology, that clinical evidence and clinical facts, not only indicated these conclusions, but forced them upon me.

Frequency of uterine distortions.

Let me, in the next place, lay before you a brief statement of facts bearing on the question of the actual frequency with which the mechanical diseases of the uterus are met with in practice. I am quite aware that "frequency" is not necessarily identical with "importance." But for the moment I direct attention to the frequency question. During a period of a little over four years, from Aug. 1865 to Dec. 1869, I kept notes of all cases treated in my out-patients' room at University College Hospital. The number of recorded cases of all kinds is 1205. Of these, 714 were cases where the patients presented uterine symptoms. Of these 714, 620 were subjected to an internal examination, and the diagnosis thus arrived at. In 94 no such examination was made.

Of the 620 examined cases, 61, or 9·8 per cent., were set down as suffering from absence or malformation of uterus, or various symptomatic affections only.

In 182, or 29·3 per cent., the patients were found to be suffering from fibroid tumour, cancer, or pelvic cellulitis.

In 377, or 60·8 per cent., the shape of the uterus was materially changed or its position markedly changed.

These 377 cases are further resolved into—

Flexions	Retroflexions, 112 / Anteflexions, 184	296	377
Prolapses	... ...	81	

Further, "the flexion cases were very generally attended with alterations such as would be properly termed as of a chronic inflammatory character; but it is precisely in those cases where the symptoms of irritation or inflammation were most marked that severe and well-established flexions were found to exist." [2]

It thus appears that in 60·8 per cent. of those hospital out-patient cases which presented uterine symptoms of sufficient importance to suggest the necessity for making an examination, marked physical changes in the form, shape, or position of the uterus were detected.

The total number of cases recorded was, as I have before stated, 1205, of which 714 are accounted for in the above analysis. There remain 491 cases, which include many of syphilis or gonorrhœa, pregnancy, general debility, over-lactation, diseases of the bladder or external generative organs, phlegmasia dolens, tumours or inflammations of the ovaries, cases of doubtful diagnosis, cases of disease of other than the generative organs, &c.

The above is an exact account of observations made and recorded in public. Before the observations in question were made I had been led to regard alterations of shape of the uterus as of high clinical importance. But these observations, made between 1865 and 1869, are more reliable than any previous ones, for the reason that they were made by a more experienced observer. The generalisation arrived at from a careful analysis of these cases is embodied in the three propositions already alluded to.

These statistics were valuable in my own estimation. But no statistics are of themselves quite capable of settling any question in an indisputable manner, it being always open to an objector to state that in other hands a very different result could have been shown to be deducible.

In endeavouring to demonstrate, therefore, the importance of these mechanical diseases of the uterus, we must appeal to reason as well as to statistics. These ideas must be shown to be in accordance with sound anatomy and physiology. They must also be shown to offer an intelligible explanation of clinical phenomena, and there must be such a conformity between them and the daily observed facts as will convince the sceptical inquirer that the ideas in question rest on a scientific as well as a clinical basis.

Mechanics of the uterus.

I propose, in the next place, to consider the mechanics of the uterus, for it is obvious that accuracy of knowledge of this subject is an essential preliminary to the matter before us. [A model of a section of the uterus, eighteen inches high, and constructed of sponge, was here exhibited. Continual reference was also made to an enlarged sectional drawing of the pelvis and its contents, furnished with movable sectional representations of the various distortions of the uterus.]

Those who regard the uterus as a part of the body subject only to general influences, and participating in the effects of those general influences in common with the other organs of the body, will naturally have little sympathy with any disquisition on the subject of the mechanics of the uterus. But the uterus is subject to the action of mechanical laws, and it is impossible to escape from the necessity for making due allowance for their operation in the construction of a rational system of uterine pathology.

Nature has so placed the uterus that it is comparatively well protected from accident. It is fixed in such a manner that it yields a little to forces which may be so applied as to change its position. Downwards, and forwards, and backwards, and even upwards, the uterus may be, to a certain extent, moved without injury or inconvenience. Various strong forces, however, are capable of dislocating it severely. The soft but elastic connexions of the uterus are very numerous, and the relation of the organ to adjacent ones is such that motion is comparatively restricted.

But while motion of the uterus, as a whole, is comparatively restricted, motion of certain parts of the uterus is more free. The centre of the uterus, which is its axis of suspension, is more fixed, but the body and cervix are more free to move backwards or forwards. And if the uterus were a rigid organ, various forces would obviously easily produce a tilting or version of the uterus, the fundus going forwards and the cervix backwards, or *vice versâ*, according as the force was applied at the back of the fundus or at the front of the fundus uteri. The body of the uterus particularly is very free to move backwards or forwards, this part of the organ having little to fix it, so far as the ligaments or attachments of the uterus are concerned. The amount of motion enjoyed by this part of the uterus in a state of health is probably not a great deal. Probably about an inch and a half represents the variation of the top of the fundus uteri in health, this variation being dependent on the fulness or otherwise of the intestines posteriorly, and of the bladder anteriorly. It seems to be certain that, if the uterus were not a comparatively rigid organ, the extent to which the fundus might be inclined backwards or forwards, in obedience to the action of forces applied from above, would be considerable. The bladder is, in some degree—when full, at least,—a protection against anterior displacement; but against posterior displacement there is less security, unless it be the slight natural inclination of the uterus forwards. This comparatively unprotected condition of the fundus uteri appears to be necessary in view of the physiological enlargement of the body of the uterus which must necessarily occur during pregnancy. Firm attachments of the summit of the fundus would necessarily interfere with the expansion and enlargement involved in the progress of pregnancy.

The chief protection which the uterus appears to have against forces tending to incline the fundus unduly forwards and backwards is the resistance offered by its own tissues. In a state of health the unimpregnated uterus has considerable firmness and solidity. Its tissues resist section by the knife, and the walls are of considerable thickness, even at its central part, where the walls are thinnest. When its vessels are filled with blood, the tissues in a sound state, and the circulation proceeding healthily, the firm walls of the organ offer an elastic, strong, spring-like resistance to any force tending to induce a strong inclination forwards or backwards; and when the force

[2] Ibid., p. 7, third edition.

applied is sufficient to produce a notable effect in displacing the fundus, the uterus thus possesses in itself a power of righting itself.

The uterus is composed, as is well known, of a fibro-muscular material, having considerable firmness of texture. Its walls are of considerable thickness; although at about the centre of the organ they are somewhat thinner than elsewhere, the difference is not remarkable. The cavity of the uterus is small in proportion to the thickness of the walls (of course this description applies to the uterus prior to the occurrence of pregnancy alone); and hence the uterus is virtually a solid organ, with a narrow canal in its centre below, and a flattened compressed cavity above. The thickness of the uterine walls is, in fact, such that, coupled with the firm resisting structure of which they are composed, the organ in a state of health resists any attempt to bend it, and so alter its shape, in a very decided manner. This construction of the uterus it is which imparts to it a solidity and power of maintaining its shape which are highly important to it. In speaking of the attachments of the uterus mention was made of the comparative freedom which the body of the uterus enjoys, due to the absence of ligaments superiorly, and the absence of such ligaments is to a great extent made up by the firm resisting thick walls which the uterus possesses, and which aid it materially in preserving its shape under adverse circumstances.

The vascular apparatus of the uterus has an important share also in contributing to the preservation of its shape. The vessels are numerous, the cavities of the uterus, or sinuses as they are termed, and which are parts of the vascular system of the organ, are of considerable capacity, and when the circulation is proceeding healthily and regularly, the tension of the full bloodvessels will contribute to the firmness of the organ as a whole, and consequently to the preservation of its natural form and shape. In fact, by some authorities the uterus is regarded as a partly erectile organ.

What actually happens when a strong force is applied to the fundus from above, is that the fundus first gives way, next the uterus is a little bent at its middle. Next follows a certain degree of version of the uterus as a whole, the cervical part of the organ taking the opposite direction to the fundus. Coupled with these alterations there is in most cases a certain degree of depression of the uterus as a whole in the cavity of the pelvis. In the end the action of the force is or may be such as to produce descent of the uterus, version, and a certain amount of flexion. From all these effects, however, the uterus may, if in a state of health at the time, and if the force has not exceeded a certain point, recover, and resume its natural shape and position. But for the power of so recovering itself it is for the most part, I believe, dependent on the elastic firm resistance of its own tissues.

As regards descent of the uterus as a whole in the pelvis, there are certain points requiring notice. Descent of the uterus in a state of health is limited; and uncomplicated descent of the uterus—that is to say, unaccompanied with anterior or posterior displacement—is rare. At least this statement holds good so long as no part of the uterus passes downwards beyond the vulva. External prolapse of the uterus, or procidentia, has been known to occur suddenly, and in cases where no previous dislocation of the uterus had occurred. The force required to effect such a change must be very considerable, and the respective share which the various attachments of the uterus have in preventing such an accident, has been made the subject of an interesting experimental investigation by Dr. Henry Savage.

The early history of chronic cases of complete prolapse is not seldom obscure, but it seems very probable that in very few does the uterus come down from the first with its long axis in the proper direction.

A further element to be considered in estimating the effect of a downward acting force on the uterus is the condition of the perineum. That the bladder in part acts as preventive of the occurrence of anteversion is undoubted; but the bladder itself requires support, and if the floor of the bladder be not properly sustained by the perineum, it may give way. Thus we may have, as a natural sequence—1, rupture of the perineum; 2, anteversion; 3, cystocele; 4, exaggeration of the anteversion or flexion; and later on there may be (5) external prolapse. The deficiency of the perineum may likewise induce exaggeration of an existing retroversion or flexion which may finally end in complete prolapsus of the uterus.

I have said nothing in reference to lateral movement of the uterus. The lateral movement is, naturally, very slight, the uterus being comparatively well fixed by the broad ligaments as well as by the general connexions of the uterus, its vessels, &c., which centre it in its lateral aspects.

The possible alterations in the position and shape of the uterus induced by action of external forces are:—

1. Slight version, anterior or posterior.
2. Slight descent of the whole uterus.
3. Considerable version, generally associated with flexion.
4. Considerable descent of the uterus as a whole in the pelvis.

In practice we find the above more or less combined in different cases.

Definition of anteversion and anteflexion.

Connected with the subject of the mechanics of the uterus is the definition of what constitutes anteversion and anteflexion. Before proceeding further this definition is absolutely necessary.

The question to be determined is—What is the amount or degree of anteversion or anteflexion which the uterus possesses in a state of health?

This is partly an anatomical and partly a clinical question, and, abstractedly speaking, it is one not easy to settle. And yet some settlement must be arrived at before we can with advantage discuss the frequency and importance of certain varieties of uterine distortion and displacement.

Since attention has been more prominently directed to the subject of uterine flexions, the remark has been frequently made by critics on the opposite side that it is natural to the uterus to be in a state of anteflexion or anteversion; and this by no means precise statement has been urged as an objection to the views of those who attach clinical importance to the existence of anteflexion. It appears that, normally, the uterus has, before puberty arrives, a very slight tendency to anteflexion or anteversion, and that the increased growth and development of the organ coincident with puberty involves, amongst other things, a certain relative elevation of the fundus and a diminution of the flexion. It appears also that in some cases, where the general development is retarded or interfered with, the uterus may retain for some time after the ordinary age of arrival of puberty this slightly anteflexed condition. But I believe that these cases are altogether exceptional, and that the amount of anteflexion which the perfectly normal healthy uterus possesses is very slight, though I admit that it is appreciable in degree.

A circumstance to which I would direct attention in the endeavour to estimate the degree of this anteflexion is the importance of not confounding the slight natural anteversion of the uterus towards the horizon as the patient stands upright with real anteflexion. The uterus, when in its natural position, is situated with its long diameter very nearly in what is termed the curve of Carus. A line starting from a point a little behind the centre of the pelvic brim, and following this curve, would be slightly inclined to the horizon, the body being upright. Regard must be had to this circumstance. Next we must endeavour to estimate the amount of change of position of the uterus involved in the physiological action of the other pelvic organs. The bladder has an important influence in this particular. How far do varying conditions of the bladder, as regards fulness or emptiness, affect the position of the uterus in a state of health? It seems that the middle portion of the uterus, and a part just below this, are intimately connected with the bladder; the uterus and the posterior and lower angle of the bladder are thus inseparable. This portion of the uterus, moreover, does not move forwards to more than a very slight extent, in consequence principally of its fixation by the utero-sacral ligaments. On the other hand, it would seem that in great distension of the bladder this part of the uterus might be pushed considerably backwards. Dr. Braxton Hicks has made some interesting experiments showing the effect of extreme distension of the bladder in producing retroversion. What happens to the fundus of the uterus, however, when the bladder is empty? Does the uterus fall into a state of anteversion, with the fundus occupying the position of the bladder, or do the intestines descend to fill up the vacant space created by evacuation of

the bladder contents? Observation has convinced me that in a state of health the oscillation which occurs is between the bladder and the intestines, and not between the bladder and the body of the uterus. Probably, therefore, the motion forwards of the body of the uterus during collapse of the bladder is very slight when the parts are in a normal condition.

I wish here to insist on the fact that in making an ordinary digital examination of the uterus, when this organ is in its proper position, the body of the uterus cannot be felt by the point of the finger unless it be introduced a very considerable distance. It should not be possible easily to define the anterior surface of the fundus uteri by the finger. The circumstances are altered in either of two events—(1) when the uterus as a whole descends too low; (2) when it is anteverted or anteflexed. Now, under either of these circumstances, the finger readily arrives at the body of the uterus, and its outline may be defined with more or less completeness, according to the degree of the displacement. If the fundus be readily, or too readily, recognised by the touch, the uterus is not, according to my view of the matter, in its normal position. No one of course doubts the existence of anteversion; no one at the present day disbelieves in the existence of anteflexion, but there are many who do not recognise these conditions in the cases actually under their observation, either because they do not look for them, or because, as frequently happens, really severe anteversions and flexions are overlooked or under-estimated. The misapprehension arises from a want of accuracy of definition as to what is normal anteversion; and as to what is the line dividing this from a real displacement. From what I have seen in private, and in consultation practice particularly, I am aware that the foregoing statement as to the general want of precision in regard to what is and what is not anteversion or flexion, as the case may be, is correct. Again, it should be borne in mind that under ordinary circumstances the examination is made with the patient lying on the side or on the back. My own observations have almost invariably been made in this manner. But it seems evident that if the patient were in the standing position any existing anterior displacement might be considerably intensified. I strongly suspect that such exaggeration does actually occur, and if so, the conclusion is natural that the degree of anteversion present as the patient lies on the side is really less than what occurs in the upright position of the body. At all events this would seem to show that conclusions as to the frequency of anteversion and flexion based on examination made in the lateral position is more likely to under-estimate than to over-estimate this numerical frequency.

In order to avoid needless repetition, I have coupled anteversion and anteflexion together; but, of course, it must be understood that anteversion pure and simple may be present without involving necessarily any flexion; and, *vice versâ*, there may be anteflexion without any version accompanying it. More commonly the two are associated, there being a preponderance of one or the other element in different cases. There is more difficulty in diagnosticating by the touch anteflexion alone than when it is accompanied by version, unless in cases where the uterus as a whole is lower down in the pelvis than usual. When the uterus is abnormally high in the pelvis, acute flexion forwards may be present, and may be difficult to appreciate by the touch. Such cases are, however, very rare, and in very few instances of acute anteflexion is there any difficulty whatever in outlining the tumour thus created by the ordinary digital examination.

It will be observed that, in speaking of the recognition of anteversion or flexion, I have said nothing of the use of the sound, and purposely so, because, as a diagnostic aid, it should only be used after careful digital examination has been made. To use the sound as the first procedure may have the effect, unless it be very judiciously employed, of so disturbing the real position and shape of the uterus that erroneous inferences may be drawn. If the uterus be soft and much flexed the sound may straighten it for the moment, and the distortion is thus undetected; and when the uterus is not soft the mere introduction of the instrument almost necessarily alters the position of the organ, reducing an anteversion, and restoring the axis of the uterus to its proper position for the time being. If, as is sometimes done, the speculum be first introduced, and the sound passed in through the speculum, no idea of the real position or shape of the uterus can possibly be arrived at. Many cases of severe anteversion and flexion thus escape recognition. It is obvious that in any attempt to ascertain the actual position and shape of the uterus great care should be taken to disturb it as little as possible by use of instruments, in the first stage of the investigation, at all events.

Respecting *retroversion* and *retroflexion* of the uterus it may be said that this definition of these conditions requires little to be added. All agree in considering an inclination of the axis of the uterus backwards a retroversion, and flexion of the canal backward a retroflexion. And it is admitted on all sides that retroversion and retroflexion are not natural conditions of the uterus. Usually, also, the diagnosis of these conditions by the touch is easier, a projection backwards behind the posterior vaginal cul-de-sac being at once recognised as something abnormal.

Forces of a dislocating tendency.

It will be necessary in the next place to consider the nature of the forces which may be brought to bear on the uterus, and which are capable of materially altering its physical relations. Intimately connected with this question is another—the effect of certain abnormal conditions of the uterus in weakening its natural resistance to the effects of mechanical forces; but it will be convenient to keep the two questions for the present dissociated.

What, then, are the mechanical forces which may act prejudicially on the uterus? The most powerful of these is, undoubtedly, a fall, and especially a fall in which the lower part of the sacral region comes violently and suddenly in contact with the ground or other hard substance. Instances of this kind are:—Slipping on the pavement on a piece of orange-peel; being thrown from a carriage; tripping while going down stairs, an accident which sometimes involves a succession of shocks as the lower part of the spine strikes step after step in the progress downwards. The most healthy uterus may, in consequence of such accidents, become dislocated.

Hardly less severe in their possible effects are violent strains and sudden powerful muscular exertions made by individuals unaccustomed to such efforts. A young lady I knew lifted a patient, who had fallen on the floor out of a chair, from the floor to the chair again, and sustained thereby severe injury of this kind. Another, in a spirit of bravado, carried a heavy weight across a room with a similar result. Then lifting invalids from side to side of the bed I have frequently known to produce great mischief when done by young ladies unaccustomed to much physical exertion. Trained nurses are aware of the effect of these and like exertions in producing severe uterine disturbance. Several cases which have come under my notice have had their starting point in the effort of removing heavy pieces of furniture.

Excessive and tiring walks and long mountain expeditions are very liable to severely strain and displace the uterus. Young women require to be carefully trained for such exertions, or great mischief may in this way result. Young women should not be permitted to undertake such exertions unless accustomed to them, and even then there is great risk attending them. Great mischief results from excessive walking practice at some schools as part of the daily routine. The weakly ones are occasionally greatly injured in this way.

Gymnastics, as practised by young women, is very liable to abuse. Violent leaps, severe strains of the muscles of the abdomen, &c., are highly dangerous, and I have known severe uterine dislocation produced by them. Belonging to this category are cases of the following kind. Quite recently, two cases have come before me of severe retroversions of the uterus produced by attempting the curious gymnastic feat of lying at full length on the floor and rising therefrom without using the hands or arms, an effort involving very great strain on the abdominal muscles.

Straining during defecation is liable to dislocate the uterus. In cases where the uterus is already slightly retroverted or flexed, the straining in question is highly injurious. The constipation frequently present in cases of retroversion is thus liable to lead to great exaggeration of the displacement. Experience shows that the straining necessitated by constipation is more liable to produce backward than forward uterine displacement. There is no doubt that it may intensify either of them.

Experience has made me acquainted with the fact that the sitting posture is in itself capable of producing very decided injurious effects, and especially sitting combined with exercise of the abdominal muscles. Thus long-continued use of the sewing-machine, playing the harmonium, belong to this category, and I have known them to give rise to grave symptoms. Particularly, I have seen serious anterior displacement of the uterus produced and aggravated in this way.

Softness of the uterus as a predisposition to distortion, &c.

We find then that the uterus is provided with certain apparatus designed to restrain and modify its movements, to enable it to resist to a certain degree forces tending to displace or to alter its shape. We have next to inquire how it happens that displacements and distortions originate, and why it is that the apparatus in question fails in certain cases to preserve the proper equilibrium.

It is obvious enough that the position of the uterus would be more readily disturbed by external shocks or by physical exertions, if the ligaments and attachments of the organ were relaxed and less firm and rigid than usual. And undoubtedly whatever tends to produce such relaxation and to diminish the rigidity of these structures will favour the occurrence of displacement. This is a statement the truth of which would be probably universally admitted. That relaxation of the uterine attachments which constitutes a part of the phenomena of pregnancy is well known, and it is well understood that the circumstance that the uterus is liable to become severely displaced after labour is over, is to some extent, at all events, a consequence of this relaxation of the various structures holding the uterus in its proper place. And although severe dislocations of the uterus do not often occur in consequence solely of this relaxation, yet undoubtedly it has a considerable share in their production.

No doubt, after pregnancy is over, a greater strain is put upon the uterine ligaments and attachments in consequence of the greater size and weight of the organ; and it is manifest that the two things in conjunction—viz., the relaxation of the ligaments *plus* the increased weight of the uterus—will favour the occurrence of a displacement. The degree of relaxation of the uterine attachments no doubt varies much in different cases. Possibly, if every patient were in perfect health at the time of delivery there would be no such relaxation; the uterus would not give way, and the attachments would be of sufficient strength to prevent displacement. But we know well that many women are in anything but a good state of health when pregnancy comes to an end; the uterus often remains too large, owing to defective or retarded involution, and associated with this there is weakness of the uterine ligaments and attachments.

It has been already remarked that the uterus itself possesses certain physical qualities which render it most important aid in resisting forces tending to bend it and distort it. This quality is firmness, hardness, and considerable rigidity. I desire now to point out how this resisting faculty may be diminished and rendered practically inoperative in protecting the uterus against the action of physical forces tending to bend and distort it.

In a certain number of cases of uterine distortion the patient is in perfect health at the time of the accident or event producing the distortion, but in the large majority of cases it is not so; and in most of the cases we witness in practice the subjects of the affection are patients who have been confessedly out of health previously. This is an important generalisation, and it will serve as an introduction to what follows.

In one of the three propositions embodying these recent views on uterine pathology, and published five years ago, it is stated that "the change in the form and shape of the uterus is frequently brought about in consequence of the tissues of the uterus being previously in a state of unusual softness." More recently, in a paper read before the meeting of the British Medical Association at Manchester, I directed attention particularly to this subject—viz., the presence of undue softness of the uterus as a factor in the etiology of uterine distortions. Inquiry into the condition of the uterus in the early stage of flexions, at the time when the symptoms begin to declare themselves, has made me aware of the fact that in these cases there is usually a very undue softness of the uterine tissues present, the ordinary firmness and resistance to the touch being wanting. Inasmuch as cases of decided flexion occurring in women not married offer the best subjects for analysis in regard to the etiology of the affection, I selected a number of such cases for illustrating the prevalence of this particular feature in the early history of uterine flexions, for in married women, or those who have had children, other disturbing elements come into play. My observations were limited, therefore, in this paper to the nulliparous uterus. Twelve cases were narrated in which uterine flexions, associated with undue softness of the uterine tissues, were met with in a marked form. The subjects of these cases were young women, most of them in an extremely feeble state of health, suffering severely from symptoms referable to the uterus, and who had been for some time incapacitated, more or less completely, for the ordinary duties of life. They were all found to be suffering from decided flexion of the uterus, and the fact concerning them to which it was my object particularly to direct attention was the state of the uterine tissues in these cases. Observing carefully the various facts concerning cases under my notice, this peculiarity some time ago attracted my notice, and I consider it worthy of prominent mention. Searching further into the history of cases such as the above, it became evident that this extreme softness of the uterine tissues was met with chiefly, indeed, I may say, almost universally, in young women whose nutrition was in a very low state, and who had for some time—some years in some of the cases,—habitually taken little food. Some of them had been underfed at school; others had been weakly, and allowed to take only what their appetite suggested, which was very little; in others a more or less constant feeling of nausea had interfered with the taking of food. In short, the preceding history of these cases was one of semi-starvation. The uterus, in common with other parts of the body, was consequently very imperfectly nourished, and the result was that its tissues had lost their natural tonicity and firmness. Hence the softness which clinical evidence plainly connected itself in my mind with starvation.

Malnutrition of the uterus is, then, a cause of undue softness of the uterus. The undue softness of the uterus constitutes, according to my experience, one of the most powerful predisposing causes of uterine flexion. The reason is obvious; for, under these circumstances, slight exertion or application of disturbing mechanical forces is more liable to produce uterine distortion than would be the case if the uterine tissues were in a sound state; and this accounts for the occurrence of the distortion in a great number of cases.

Hitherto I have spoken of softness of the uterus as predisposing to flexion in unmarried women. But when we consider the subject of the etiology of flexion in the case of married women, we encounter a fresh series of facts. It is well known than when pregnancy is over, the uterus offers a mass of considerable size, and that it has to undergo a process designated the involution of the uterus, by virtue of which it regains its original dimensions. While the involution is in progress the uterus is softer than usual. When the involution is interfered with, this softness of the uterus is more marked than in other cases. The tissues of the organ are, in some of these cases, extremely soft, and the organ is a long time contracting to its proper size. Examining the uterus after labour we are not unfrequently able to substantiate this fact. The uterus may be found extremely soft as late as a month after parturition, the organ being at the same time much too large. The question, Why does the involution in some cases proceed so imperfectly? offers an interesting subject for inquiry. In the cases in which I have observed it the associated condition universally present has been extreme feebleness and general weakness. It will generally be found, I believe, that the subjects of these cases are individuals who have been recently, or at some previous time, very insufficiently nourished. A low and meagre dietary during the period of child-bed is responsible for this irregularity in many instances; but, of course, weakness and feebleness may have been present during the pregnancy, and may have been produced by malnutrition then or at any antecedent period. In any case it has the effect of disturbing the proper involution of the uterus when the pregnancy is at an end.

Again, after abortions it is not uncommon to meet with retardation of the contraction of the uterus; the organ

remains loose and open in texture, and wanting in firmness for some time, and the presence of undue softness of the tissues can be readily substantiated.

The frequency with which flexions originate shortly after labour has occurred is a remarkable fact. Many patients suffering from these disorders have been perfectly free from all symptoms of uterine affection previously, but their pains and discomforts date from some one particular pregnancy. This is a common statement for patients to make in relating the history of their troubles. Clinical evidence abundantly shows that disturbance of the involution process constitutes a very decided predisposition to the occurrence of flexion, and the explanation which obviously suggests itself is that the undue softness of the uterine tissues is responsible for the subsequent distortion of the organ. It by no means happens that the uterus becomes changed in shape in all cases when involution is retarded, but it is certainly the fact that exertions which in more healthy subjects would have little or no disturbing effect on the uterus do, in them, produce, very frequently indeed, marked and serious distortions, leading to grave and troublesome effects, not seldom leaving their injurious consequences traceable many years after the commencement of the disease.

The degree of softness of the uterus which may be present varies in different cases. I have seen cases in which it was so considerable that the uterus appeared absolutely at the mercy of the action of gravity, the fundus inclining backwards or forwards according to the position the patient happened to assume. In particular may be mentioned a case of chronic retroflexion associated with this extreme softness of the tissues. In this case, after the fundus uteri had been supported posteriorly by means of a pessary for a little while, the uterus became decidedly anteflexed. This was dealt with, when the organ became again retroflexed. Finally, it became necessary to apply support, both anteriorly and posteriorly, to keep the uterus straight. The patient was quite comfortable when her uterus was in proper position, and exceedingly uncomfortable when, for any reason, the mechanism used failed to secure the uterus.

In short, observation teaches that the uterus possessing its natural firmness resists forces tending to bend it with success, unless those forces happen to be considerable. Very severe accidents may produce suddenly a decided uterine flexion, but these cases are not very common, whereas cases in which the uterus has slowly become weakened and softened, and thus incapacitated for resistance to external influences, are comparatively very frequent, and it is under these circumstances that slight accidents, over-walking, over-exertion, produce injurious effects.

The problem to be solved.

It will now be necessary, in reference to the problem before us—namely, the question as to the importance and influence of the mechanical diseases of the uterus—to consider the clinical aspect of cases of uterine disease more particularly. We have now to survey another series of facts—namely, the symptoms, abnormal sensations, discomforts, and inconveniences which patients experience. On the one hand, we have patients suffering variously, now unable to walk, feeling pains, suffering in a multitude of ways from derangement of the menstrual functions, presenting various other symptoms traceable to the influence of the uterus. On the other hand, we have information from clinical observation, from post-mortem examination, and otherwise, of the existence of a variety of changes in the position, size, shape, texture, and vascularity of the uterus, certain abnormalities of appearance of the os uteri, increase of secretion, &c. Now, it is evident that any system of uterine pathology professing to be a system must be an intelligible interpretation of these various phenomena. The suffering, and the cause of the suffering, must be ascertained; the symptom and the lesion must be placed in the proper relation one to the other. It must be shown that the pain or inconvenience from which the patient suffers stands in proper relation to this, that, or the other alteration of the uterus. This analysis of symptoms has been hardly attempted, the chief attention of uterine pathologists having been directed solely to the discussion of the uterine changes—the presence of inflammation, the presence of so-called ulceration, and the presence of congestion, each one of which has in turn been put forward as *the* important pathological condition of the uterus, and the relation of these changes one to the other; and these have occupied much attention, but little has been done to ascertain the connexion of particular lesions with particular symptoms.

I have drawn up two lists, the first (A) a list of the symptoms of all kinds which may be observed in connexion with diseases or affections of the uterus, these symptoms being placed as nearly as possible in their order of frequency. The second (B) is a list of the various physical changes which the uterus may undergo.

A. *Uterine symptoms.*	B. *Uterine changes (non-organic).*
Pain { 1. Spontaneous. 2. Produced by motion (dyskinesia). 3. Undue sensitiveness of uterus to touch.	Change in position.
Leucorrhœa.	Change in size of walls.
Dysmenorrhœa.	„ „ of cavity.
Menorrhagia.	„ „ of cervix.
Amenorrhœa.	Change in shape.
[If married—Sterility, Abortions.]	Change in patency of canals.
Various reflex phenomena: 1. Sickness or nausea. 2. Hysteria. 3. Convulsions. 4. Cephalalgia.	Change in texture (undue hardness, undue softness).
Disturbance of functions of bladder.	Increased vascularity.
Disturbance of functions of rectum.	Disorders of innervation.
Disturbance of sexual functions (dyspareunia).	Increased secretion.

Here, then, we have the data for the construction of a pathology of the uterus: all the possible changes on one side, all the possible effects on the other. It must be understood that organic diseases of the uterus, cancer and fibroid tumour, are, of course, excluded from the list. The nature, course, and effects of these organic diseases are better understood. Let it not be forgotten also that these organic diseases may occasion one or all of the uterine symptoms.

Looking at the list of uterine symptoms on the one side, and the list of possible uterine changes on the other, it is evident that the clinical importance of any one of the possible uterine changes should be, approximately at all events, indicated by the frequency with which it occasions uterine symptoms. If it can be shown, for instance, that any one uterine change, or any one combination of uterine changes, has a very decided pre-eminence in this respect, it will be natural to conclude that considerable importance is to be attached thereto. Further, should it be shown that this particular change or combination of changes is particularly associated with those especial uterine symptoms of which patients most complain, an additional reason will exist for attaching great importance to this uterine change. Further still, should it be capable of being shown that there is a rational and intelligible explanation of the frequent association of these particular uterine changes with those especial uterine symptoms, there will be a greater reason still for thinking these uterine changes of importance.

The analysis of this relation between uterine symptoms and uterine changes will be the subject of the next lecture.

PRESENTATION.—The retirement of Mr. Paul Jackson, of Wimpole-street, has been made the occasion for presenting him with a testimonial, consisting of a purse and a "loving cup" bearing the following inscription:—"This loving cup, together with a purse containing 250 sovereigns, was presented on the 8th day of December, 1877, to Paul Jackson, Esq., M.R.C.S., &c., on his relinquishing his professional practice, to remind him that he carries with him in his retirement the respect and esteem of his numerous patients and friends, by whom his many estimable social qualities, together with the skill, ability, kindly sympathy, and devotion to his art, which have so eminently distinguished him throughout an active professional career of upwards of forty-two years, have long been recognised, and will long be remembered."

ON THE

LIMITATION OF FLUID IN THE FOOD AS AN AID TO THE TREATMENT OF SEROUS EFFUSIONS.

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(*Concluded from p. 840.*)

IN the two remaining cases in which I have had the opportunity of applying the restriction of fluid, the treatment has been interfered with by disturbing causes.

The first was that of a boy of eight years suffering from slight general dropsy dependent upon mitral regurgitation and renal disease; the urine was scanty and albuminous. Drink was restricted to sixteen ounces, a purge of calomel and jalap given, followed by a pill of digitalis, mercury, and squill three times a day. A severe diarrhœa ensued, the quantity of urine remaining small until the purging ceased, when the flow of water increased to double the previous quantity. The drain upon the fluid of the body must have been great, but the main channel of excretion being by the bowels prevented any exact estimation. The œdema disappeared in the course of a few days, and, the patient complaining much of thirst, the restriction as to drink was removed.

The last case was one of pleurisy with effusion into the right side of the thorax, in A. P——, a boy ten years old. There was a history of a definite commencement of the attack, with sharp pain and fever six days before. Physical examination showed the right pleural cavity to contain a large quantity of fluid, which reached to the level of the spine of the scapula behind and to the third space in front. The urine was measured for two days before treatment was commenced, and found to be 800 cc. and 750 cc. respectively; the average of drink taken for the two days being 25 oz. = 707·5 cc., yielding the unusual feature of an excess of outflow = 67·5 cc. Drink was then limited to 10 oz. = 283 cc., a purge of calomel and jalap being given, followed by a pill of digitalis, squill, and mercury, every four hours. The urine fell the next day to 375 cc., or 92 cc. in excess of the fluid swallowed—a gain in drainage of only 24·5 cc.; and the next day, again, to 350 cc., or 67 cc. in excess of inflow by drink; and a drainage equal to that existing before treatment commenced. On the third day, however, the urine rose to 450 cc., and on the fourth to 460 cc., being 167 cc. and 177 cc. in excess of inflow by drink respectively. The average for the eight days during which this restriction was maintained was 416·8 cc.; and an excess of outflow of 133·8 cc., or an average daily gain in drainage over the condition on unlimited drink of 66·3 cc. The fluid in the chest had declined, so that the level of dulness had fallen to the lower angle of the scapula. The pulse now became very irregular, and the digitalis was stopped, the fluid taken being increased by chinchona mixture to 367·9 cc. This was at once followed by a diminution in the flow of urine during four days, at the end of which time, the temperature remaining high (102° to 104° at night), and the fever causing much thirst, drink was increased to 849 cc. The loss in drainage was at once apparent; the average flow of urine only rose to 564·2 cc., so that in place of excess of outflow there was excess of inflow to the extent of 284·8 cc., or a daily drainage loss of 418·6 cc., as compared with the condition when on 283 cc. drink and the digitalis pill. The condition of the chest remained absolutely stationary; the high temperature also persisted. It was thought probable that this might be due to the presence of pus, and the chest was tapped on May 9th, three weeks after admission. Only two ounces of clear serum were obtained, with the result of improving the entry of air and giving rise to friction-sound under the right mamma. The boy was from the time of tapping allowed perfect freedom as to drink, the amount taken being registered for seven days. The comparison with urine is in curious contrast to the preceding relations. As will be seen by the table, the average amount of drink taken was no less than 1413 cc., while the average flow of urine was only 708·5 cc., showing an excess of inflow over outflow of 705 cc., and a daily drainage loss, as compared with the condition under digitalis and 283 cc. drink, of 833 cc. It must be stated, however, that the quantity of urine recorded during this period of unrestricted drink is slightly under-estimated, owing to the loss of a small quantity passed with the stools on one or two occasions; in all other calculations this was invariably included in the estimate. The condition of the patient now remained stationary; the fluid in the chest did not further diminish, and the temperature remained three degrees above the normal. A second tapping was resorted to on June 16th, and two ounces more fluid withdrawn. This was followed by marked improvement; but eventually pus was developed, and although removed by repeated tappings, and finally drained off by a free opening, the case ended fatally at the beginning of October.

TABLES SHOWING THE TREATMENT AND THE RELATION BETWEEN THE AMOUNT OF FLUID TAKEN IN AS DRINK, AND THE QUANTITY EXCRETED BY THE URINE, IN THE CASE OF ALBERT P——.

I.—*First period of two days. Drink not restricted, but the quantity taken measured. No drugs were given. The bowels open normally.*

Date.	Cubic centimetres of fluid taken in preceding 24 hours.	Cubic centimetres of urine passed in preceding 24 hours.
April 19th	849	800
„ 20th	566	750

Average daily quantity of urine passed for two days on unlimited drink (or an average of 707·5 cc.) = 775 cc. Average daily excess of outflow by urine over inflow by drink = 67·5 cc.

II.—*Second period, comprising eight days. Fluid restricted to ten ounces of milk = 283 cc. Drugs given: a purge of calomel and compound jalap powder, followed by a pill containing half a grain of digitalis powder, a grain and a half of squill powder, and a grain and a half of mercury pill, every four hours. Bowels open freely after the purge; subsequently regularly in the normal manner.*

Date.	Cubic centimetres of fluid taken in preceding 24 hours.	Cubic centimetres of urine passed in preceding 24 hours.
April 21st	283	375
„ 22nd	283	350
„ 23rd	283	450
„ 24th	283	460
„ 25th	283	500
„ 26th	283	450
„ 27th	283	450
„ 28th	283	300

Average daily quantity of urine passed for eight days on 283 cc. of drink = 416·8 cc. Average daily excess of outflow by urine over inflow by drink = 133·8 cc.

III.—*Third period, comprising four days. Drink restricted to ten ounces of milk and three ounces of mixture, or thirteen ounces in all = 367·9 cc. Drugs given: half an ounce of chinchona mixture every four hours. Bowels acted normally.*

Date.	Cubic centimetres of fluid taken in preceding 24 hours.	Cubic centimetres of urine passed in preceding 24 hours.
April 29th	367·9	300
„ 30th	367·9	360
May 1st	367·9	450
„ 2nd	367·9	435

Average daily quantity of urine passed for four days on 367·9 cc. of drink = 386·2 cc. Average daily excess of outflow by urine over inflow by drink = 18·3 cc.

IV.—*Fourth period, comprising seven days. Drink increased to thirty ounces = 849 cc. Drugs given: chinchona mixture as before. Bowels acted regularly.*

Date.	Cubic centimetres of fluid taken in preceding 24 hours.	Cubic centimetres of urine passed in preceding 24 hours.
May 3rd	849	500
,, 4th	849	480
,, 5th	849	650
,, 6th	849	640
,, 7th	849	670
,, 8th	849	650
,, 9th	849	350

Average daily quantity of urine passed for seven days on 849 cc. of drink = 556·2 cc. Average daily excess of inflow by drink over outflow by urine = 284·8 cc.

V.—*Fifth period of seven days. Drink unrestricted, and quantity taken daily measured, the average being* 1413·8 *cc. Drugs given: the chinchona mixture as before. Bowels open in normal manner.*

Date.	Cubic centimetres of fluid taken in preceding 24 hours.	Cubic centimetres of urine passed in preceding 24 hours.
May 10th	1768·7	820
,, 11th	1760·6	600
,, 12th	1556·5	1020
,, 13th	1528·2	500
,, 14th	1330·1	750
,, 15th	933·9	840
,, 16th	1018·8	450

Average daily quantity of urine passed for seven days on unlimited drink (an average of 1413·8 cc.) = 708·5 cc. Average daily excess of inflow by drink over outflow by urine = 705·3 cc.

The cases here reported are too few in number, and the experiments too limited in scope perhaps, to furnish any complete and final proof of the exact value of the treatment adopted. But one or two results come out very clearly, and are sufficiently striking and important to merit further examination—viz.:

1. The fact that, in cases of serous effusion at any rate, if the fluid taken into the body as drink be limited to a small quantity, an amount of fluid can be drawn out of the body by the stomach and bowels greatly in excess of that thus put into it at the time.

2. That, although the excess of fluid thus drawn off may be obtained, to some extent, at the expense of the other secretions or the blood, the simultaneous subsidence of the dropsical accumulations, and the absence of any other sufficient source of supply, show that it must have been chiefly derived from the latter.

3. The proportion of outflow by urine to inflow by drink, or the gain in drainage by the kidneys, was always greater when the fluid taken in as drink was reduced below twenty ounces; and more than this, *that the gain in drainage was in inverse proportion to the fluid swallowed.*

4. The greatest drainage—i.e., the greatest excess of outflow over inflow—was attained in each case under the administration of digitalis.

5. The reduction in the gross outflow of urine was always less in proportion than the reduction of inflow by drink, with which it corresponded; and, conversely, the increase of urine was always less than the corresponding increase of inflow by drink. The latter result may, however, have been affected by the previous privation. While it appears, therefore, that in these cases the drainage by the kidneys was generally effective in inverse proportion to the quantity of drink swallowed, and that under the influence of digitalis a greater excess of outflow by urine over inflow by drink was obtained when the latter was limited to from five to sixteen ounces than when twenty to thirty ounces were taken, it does not necessarily follow that the same rule would hold good if larger quantities of fluid still were taken. It is possible that the additional quantity taken in may be more than compensated by increased outflow under the action of purgatives and diuretics. The enormous discharge of urine in the first case under the influence of digitalis, for two days before the drink was limited, would at first sight seem to support this view. But although, owing to the amount of drink not being measured, the means of accurate comparison are wanting, if we take the lowest average of 30 oz. = 849 cc. as the quantity of drink, it will be seen that the excess of inflow over outflow was 451 cc. and 195 cc., or an average of 1100 cc., as compared with 2157 and 1357, or an average of 1757 cc. for the two days next following, when the fluid was limited to sixteen ounces. The presumption furnished by the evidence in these cases, and especially by the record of the last, during the period when drink was unlimited, is against the view that the diuresis would be increased in proportion to the increased supply of fluid—that is, "water in the best diuretic." But experiments as to the effect of diuretics, and especially of digitalis, together with a free and large supply of drink, are necessary to clear up the point satisfactorily.

It is remarkable that the suffering from thirst should have been so slight. The restriction of drink caused no serious distress in any case, and the discomfort experienced was relieved and fully compensated for by a few acid drops, except in the fourth and fifth cases, in one of which there was advanced renal disease, and in the other much fever.

It is further worthy of note that the limitation of drink did not produce any great diminution of the gross quantity of urine in the case of renal disease, nor any symptoms which would forbid the adoption of such treatment on occasion in similar cases. It would be desirable to ascertain the effect of the restriction on the excretion of urea.

Finally, then, limitation of drink may fairly be used as an adjunct to treatment in cases of passive dropsy, or inflammatory effusion when the acute stage is over. In acute cases, accompanied by much thirst and fever, such restriction would probably be ill borne. In serious renal disease I should hesitate to adopt it, except with much caution and constant estimation of its effect upon the gross excretion of urea.

Hyde-park-place, W.

TREATMENT OF NEUROSAL AFFECTIONS OF THE HEART.

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(*Concluded from page* 837.)

THERE are other cases of a more aggravated nature, where the whole nervous system is unstrung, but where the chief complaint is of the heart. Such cases are most marked and most commonly seen in women. Instead of going over the general symptoms of such cases, I prefer to relate a typical case, the more illustrative as it demonstrates what treatment may do for these sufferers.

M. H——, aged forty, a married woman with children, was brought to me at the West London Hospital on the 4th March, 1875, by my colleague Dr. Wiltshire, as a case that would interest me. She was a woman of good physique, and intelligent beyond the majority of women of her class in life. The most marked symptom about her was an expression of uneasiness and apprehension. She was afraid of all and everything. She was afraid to be left at home; she was afraid to go out. If a knock came to the door it would give her such a start, and bring on such an attack of palpitation, that frequently she could not get across the floor to open the door. On account of its effects, especially upon her heart, she had been obliged to give up all intercourse with her husband for some years past. She always suffered from severe headache at every catamenial period. Life she described as having become a burden to her. She was put upon a mixture of bromide of potassium and digitalis in infusion of cascarilla. To regulate the bowels, she

had some pills of aloes and myrrh. There were no derangements of the generative organs. Improvement speedily commenced, and on April 13th she declared herself much better. On May 13th she reported that she had escaped the habitual nervous headache at her last catamenia. It was now determined to try the addition of quinine; and a mixture of quinine, hydrobromic acid, and digitalis, in infusion of cascarilla, was substituted for the first mixture. On June 2nd she reported herself as feeling much better. She got good rest at nights; she had scarcely any palpitation, suffering less therefrom than she had done for years; the feeling of numbness extending down the left arm and hand, with which she had been troubled, was much better. For eleven years past she had not been able to walk so well as now; in fact, she described herself as feeling quite another woman. In the latter part of June she had a child ill, and was much harassed by this; yet she had not suffered from palpitation, and had no longer occasion to sit on the stairs when half-way up, as before. No nervous headache at the preceding catamenial flow. She continued to improve in every respect, but at her catamenia in July she again suffered headache from neglecting her bowels; at the next menstrual period she attended to this, and had no headache. On September 9th she described herself as feeling quite "brave": she could cross streets, or stay at home alone at nights without discomfort, her husband having been from home for a fortnight. On October 7th she said she felt extremely well, and that she could resume her duties as a wife without discomfort. In November she said she could go to the city, and felt "quite independent at the crossings"; and, finally, in December she reported herself as feeling quite well, and asked to be discharged. Along with this general improvement her heart had become perfectly quiet, and its tumultuous stroke was exchanged for a normal beat. The look of dread and apprehension which she wore when first seen gradually disappeared; and in its place there grew up a look of recovering self-reliance quiet in accordance with her subjective sensations. I saw the patient on Dec. 10th, this year, and she was quite well in every respect, except headache at the catamenial periods. During the interval she has been actively engaged in her business of dressmaker.

From its general surroundings, this case of neurosal affection of the heart was one where such rapid improvement could scarcely have been looked for; nor can such happy results be attained in every case, nor even in a large proportion, when of such long standing. Nevertheless, such a case gives great encouragement to pursue a definite line of treatment in similar cases; and much relief may be afforded even when anything like complete cure, as above, is unattainable.

In connexion with irritable heart must not be forgotten the effects of tea-drinking. Amongst the out-patients of hospitals this is more especially the case than in private practice; though it is far from unknown in the latter. The active principle of tea—theine—is a powerful neurotic agent, and when indulged in to excess has a very decided action upon the cardiac ganglia, rendering the heart irritable, excited, and unrhythmical in its contractions. In such cases the withdrawal of the tea is absolutely essential to successful treatment. Looked at from a chemical point of view, the principles of coffee and of cocoa are closely allied to those of tea; and it seems difficult to understand how the symptoms produced by excessive indulgence in tea are relieved by substituting for it these other allied vegetable principles. Still clinically the fact remains. It is said that tea contains, in addition to its principle, theine, a volatile intoxicating oil; and it may be the presence of this agent which makes the difference.

Another vegetable principle exercises a decided effect upon the heart—viz., tobacco. The effect of tobacco is to render the heart's action quicker, its beat feebler, and to promote a liability to palpitation. In the Royal Infirmary of Edinburgh this form of neurosal affection of the heart is recognised and known as "smoker's heart." In many cases this condition arises from great indulgence in strong tobacco; and very frequently the substitution of a lighter form of tobacco in moderation is sufficient to afford relief, without the abandonment of the favourite habit. This form of nervous affection of the heart is not so common, however, as that produced by tea.

In other cases there exists great irritability of the heart, which is closely connected with some irritation elsewhere. Several writers, and especially Botkin, of St. Petersburg, assert the pernicious effect of co-existent irritation elsewhere upon the heart; and insist that such source of irritation be totally removed, or, where that is not practicable, relieved as far as may be. Some little time ago a well-marked instance of such source of irritation came under my notice. The gentleman was the most excitable person imaginable. His heart was going at a pace which defied any correct estimate, but as a rough statement it may be said at about 150 beats per minute, with exalted action. In this case there existed great prostatic irritation, and whenever this was very troublesome the heart's action was always worse. The patient had been at Carlsbad, Homburg, Tarasp, and elsewhere, and been under many leading practitioners at home and abroad without any benefit. He could not be induced to give a systematic line of treatment a fair trial; consequently whether it would have been successful or not cannot be positively affirmed. In such cases there would seem to be either some abnormal activity about the accelerating ganglia of the heart, or else some derangement in the inhibitory action of the pneumogastric.

A case of totally opposite character is supplied by a young gentleman now under my care. He is a tall well-developed youth of active habits, and probably the first derangement of his heart's action took its origin in some overstrain, which has left the heart with perturbed action. He suffers from palpitation, but when seen his heart has always been beating steadily. There is, however, an occasional halt, which is distinctly felt by him, and which he describes as very unpleasant. By accident it was discovered that when set thinking the rate of his pulse became altered. I sent him on to my friend, Dr. Broadbent, who found that when talking to him about his case several intermissions took place; and on asking a question involving some thought a gradual slowing of the heart's action was produced, but no intermission. He was put upon a combination of bromide of potassium and digitalis, and has improved in every respect. He complains, however, of still feeling intermissions when thinking hard. Here it is obvious that when thinking the vagus is excited to action, and so inhibits or retards the action of the ganglia of Remak.

A distinct class of cases have been described by Da Costa, of Philadelphia, which he has denominated "irritable heart," and which are now well known. They were first noted in men serving in the severe campaigns of the American civil war. The sufferers were unable to march with their comrades, had dizziness and palpitation, with pain in the chest. The pulse-rate was much affected by position, varying from 110 when up, to 80 when lying down. Such cases do not present themselves to our notice in this country in any frequency; and I can only recall one case where the symptoms of irritable heart, as given by Da Costa, were well pronounced. In this case much good arose from the administration of digitalis and bromide of potassium together.

At other times instances present themselves where there is much excitement in the heart's action combined with a generally anæmic condition. Here there is a hæmic murmur at the pulmonary orifice with palpitation at intervals. These cases are usually furnished by girls. Here digitalis and the bromide of potassium are inferior in utility to tonics, with hæmatics, and attention to the leucorrhœa which is almost invariably present. The diagnosis of these cases is not difficult: there is the objective sign of palpitation, the hæmic murmur, the bruit de diable, and the obvious anæmia. The subjective symptoms are—shortness of breath, especially when going up stairs, due to the deficiency of red blood-corpuscles; palpitation; and often general nervousness with vertical headache. In such cases there is often menorrhagia as well as leucorrhœa, and attention to these matters is absolutely essential to successful treatment. Some time ago a young lady was sent to me from Torquay with the above symptoms. Her medical attendant saw that she was pale and anæmic, and found a systolic bruit; whereupon he sent her up to town for further advice. The heart symptoms here were quite a secondary matter, and the true line of treatment to be adopted was that of attention to the general health.

Such are some of the forms of disturbance of the action of the heart met with in practice, without actual organic change being present. They may have different and varied

associations; but the source of the disturbed action must doubtless be sought in the nervous arrangements of the heart itself. These are very much more complex than is ordinarily supposed. There are, first, the cardiac ganglia themselves, by which rhythmical movements can be carried on when the heart is removed from the body. Then there is, next, the controlling or inhibitory action exercised by the pneumogastric. It is well known that excitation of the pneumogastric nerve will slow the ventricular contractions, and, if powerful enough and sustained, arrest the contractions altogether. In animals it is found that the right vagus possesses this inhibitory action more powerfully than the left. Not only is this the case, but there are contained in the pneumogastric certain fibres which possess an accelerating action, and increase the rapidity of the heart's beat. Irritation of the medulla oblongata will cause an acceleration of the heart's beat if certain nerve tracts are uninjured.

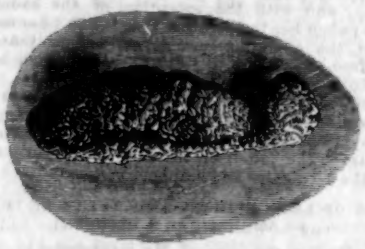
Now, amidst these complex nervous arrangements, it is not always easy to distinguish what part of the mechanism is deranged, and concerned in the production of the symptoms complained of. In cases of suspended systole, or intermittence of the heart's stroke, probably there is some irritation in the vagus by which its arresting action is increased. On the contrary, in these common cases of excited and rapid action of the heart it is possible to speculate at will as to how far this increased action is due to impaired power in the vagus—the regulating and inhibitory power being from some cause diminished—or whether it finds its origin in some irritation which stimulates the accelerating fibres. We are not yet in a position to speak very dogmatically about such nervous derangements—with their objective symptoms, palpitation and unrhythmical action. Probably in a few years more this department of heart ailments will become as distinctly intelligible as are the other forms of diseases of this organ; at present each case forms a study of itself and requires its own appropriate treatment. Consequently it is not possible to lay down axiomatic rules for treatment, as has been done in the preceding articles on primary and secondary affections of the heart. All that may be said is that in many cases relief, and even something more, can be attained by a scheme of medication which consists in the administration of tonics, together with sedative neurotics, as in the union of quinine and digitalis with the bromide of potassium or hydrobromic acid. In addition to these measures it is obviously necessary to place the system as far as possible at rest, both physically and psychically; and this is to be achieved largely by the avoidance of all forms of disturbance and excitement, especially of a sexual character. The demands upon the system must be reduced to a minimum. We all recognise how important it is to reduce all demand, such as is induced by exertion or effort, upon the heart when its muscular walls are affected. So in neurosal affections of this organ, it is equally desirable that all forms of nervous expenditure be economised to the utmost. In all cases where there are obvious derangements these must be attended to. A misplaced uterus must be replaced; the leucorrhœal flow, so commonly found, must be attended to; if there be any tendency to a load in the bowels this must be done away with by a proper purgative; if there be any dyspepsia present it must be met by a suitable diet, and vegetable bitters with bismuth; whenever there is anæmia some of the lighter preparations of iron must be prescribed, in small doses at first, and always after food. Mental and physical quiet must be insisted upon; and still more, for successful treatment, the patient must be made clearly to understand that the physician is confident in his power to afford relief.

Somerset-street, W.

A CALCULUS REMOVED FROM UNDER THE TONGUE.

BY OCTAVIAN NEWCOME ROYLE, M.D.

THE accompanying sketch gives a very good idea of a calculus I removed from an enlarged and distinct sac immediately under the mucous membrane of the tongue close to the frænum. The patient from whose mouth it was extricated suffered much for years with a dribbling away of saliva, associated oftentimes with intense pain of a neuralgic character and muscular twitchings in and about the muscles of the lower jaw, which, as may be imagined, was a source



of great discomfort to her. All these symptoms, however, disappeared after the removal of the calculus, which, on putting into the scales, I found weighed exactly one hundred grains, its length being two inches, and circumference somewhat under. In appearance it resembled, from its rough surface, a mulberry calculus. From the great distress caused by the presence of this foreign body, and immediate relief to all the symptoms after removal, together with its, to me, unique appearance, I have deemed it worthy of record. The symptoms of the above case ran somewhat counter to those of tumours in these localities, generally defined as ranular, and containing the elements characteristic of saliva. The only treatment adopted was free cauterisation (not excision, as generally practised, I believe), with nitrate of silver, on three occasions only, with an interval of a few days between each, the cavity becoming fairly obliterated after a fortnight; and I am in a position to state that there has not been any tendency to return since its removal, now over twelve months.

Milnthorpe, Westmoreland.

A Mirror OF HOSPITAL PRACTICE,

BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum, tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Proœmium.

LONDON HOSPITAL.

SYNOVIAL DISEASE OF ANKLE-JOINT; SUPPURATION AND DISORGANISATION; AMPUTATION OF FOOT ANTISEPTICALLY BY TEALE'S METHOD; ANTISEPTIC DRESSING; RECOVERY.

(Under the care of Mr. RIVINGTON.)

A GIRL, aged fourteen, was admitted with disease about the ankle-joint, said to have been of some three months' standing. Splints were applied, and the general health attended to, but the disease extended, the joint became involved, and amputation was decided on.

On May 18th, ether was administered, and a Teale's amputation of the foot was performed antiseptically. The patient recovered very well from the operation, and next day, and on each succeeding day, the wound was dressed antiseptically. The patient's health remained remarkably good. She slept well, had little pain, took her food very well, and had no bad symptoms of any kind. There was but little discharge from the wound, but the edges did not appear inclined to unite.

On May 29th the edges were brought together by four hare-lip pins, and one or two sutures. The antiseptic dressing was continued. For the next few days the wound was dressed at intervals of two days. The pins were removed after five days, and secondary union of the edges was found to be complete. The pins did not set up the slightest irritation or inflammation. The wound was now dressed at intervals gradually lengthening from three to six days, up to July 1st, when the wound having almost entirely healed

up, the antiseptic dressing was discontinued, and ordinary oiled lint applied.

The patient's health throughout was remarkably good in every way, and with the exception of the evening of May 19th (when her temperature rose to 102°) her temperature after the operation never rose higher than 99·8°, whereas from April 28th to May 7th it fluctuated between 104° and 101°.

Examination of the foot after removal showed extensive disorganisation of the ankle-joint, with pulpy degeneration of the synovial membrane. The latter condition was evident also in the joints of the tarsus, especially in that between the astragalus and scaphoid bones.

AVULSION OF LEG; PRIMARY AMPUTATION OF THIGH IN THE LOWER THIRD; RECOVERY.

(Under the care of Mr. RIVINGTON.)

A seaman, aged forty-five, was admitted on May 9th, having had the left foot and lower two-thirds of leg entirely torn away. The limb had been caught in the twist of a running rope while the patient was engaged on a steam-tug. He was a healthy and well-nourished man.

A few hours after admission, the leg was amputated immediately above the knee-joint by a modified Teale's operation. The flaps were adjusted with wire sutures, dressed with oiled lint, and a drainage-tube inserted.

On May 11th the stump was dressed; the patient was well, slept well, and had little pain. The wound was healthy; edges in good apposition; there were no rigors or other bad symptoms; but little discharge. The drainage-tube was removed and the wound was dressed with oiled lint as before. On the 13th May some portions of the wound had healed primarily, but there was a good deal of discharge and some bagging. Two thick pads were placed on the anterior and posterior aspect of the stump. On the 18th the patient was progressing well. The general health was good. The temperature, which on the morning of the 10th was 101·8°, and on the evening of that day 103° (its highest point), had gradually fallen, on the morning of the 14th it was 99·2°, and after that remained about normal. The wound looked well; there was but little bagging; the discharge was less, and of a healthy character; the edges were a little separated in the centre of the wound, but elsewhere primary union was maintained. On June 7th the wound had completely granulated up, there was but very little discharge, and the patient sat up. Temperature not above normal since last note. On July 1st the patient could get about on crutches; the wound was well healed and free from pain.

GUY'S HOSPITAL.

EXTRACTION OF CATARACT FROM BOTH EYES IN A CASE OF MICROPHTHALMOS.

(Under the care of Mr. CHARLES HIGGENS.)

HENRY P——, aged fifty-seven, was admitted March 20th. Right eye had been nearly blind for forty years, and the left eye had lately begun to fail. The patient stated that till within the last three months he could, with the left eye, see well at distance, and read the smallest print without the aid of a glass. He had been for years a clerk in an office, and done a great deal of reading and writing. Both eyeballs were extremely small, the cornea being very ill-developed, and having the appearance observed in cases where suppuration has taken place and left only a small flattened portion of corneal tissue. There was coloboma of the iris in both eyes, and slight corneal opacity in left; both lenses were cataractous, that in the right eye appearing almost black, whilst that in the left was of the ordinary grey colour. Both eyes had good perception of shadows.

In the right eye a flap section was made downwards, and a portion of iris removed by the side of the coloboma. Great difficulty was met with in the removal of the lens; the section required to be enlarged with scissors at each angle, and to such an extent that quite two-thirds of the cornea and immediately adjoining sclerotic were included in the flap. The cataract, which was of a deep brown colour, quite hard, nearly spherical in shape, and quite as large as the lens of an emmetropic eye, was at length pressed out. No escape of vitreous or other accident happened. Both eyes were bandaged in the usual way with pads of wet lint. An attack of iritis occurred; otherwise the case went on much more favourably than could have been expected.

On May 15th the iritis had subsided, but as the pupil was quite closed, an iridectomy was performed upwards.

On Aug. 8th the cataract was extracted from the left eye. Experience having been gained from the difficulty met with in removing the lens in the right eye, a large flap section, including the cornea and sclerotic immediately adjoining, was made upwards, and an iridectomy performed. A considerable proportion of the cataract was soft cortical matter, but there was a large hard nucleus. The whole was removed without difficulty. The size and shape of the lens in this eye could not be estimated, so large a proportion of it being soft. It was probably, however, of the same proportions as that in the right eye. The eyes were bandaged in the usual way, and the section healed readily.

On Oct. 3rd, vision, which up to this time had been fairly good and improving, became suddenly impaired; there appeared to be hæmorrhage into the vitreous.

On Nov. 16th there was some floating opacity in the left vitreous, but the man could make out distant objects of large size without a lens. With a lens of +12 D (3¼ in.) he could count fingers at about forty inches, and saw distant objects more distinctly. He could tell the time on a white-faced watch with gold hands with a lens of +17 D (about 2½ in.) at about twelve inches. The details of the fundus could not be clearly made out, but there was a white reflex from the lower part, probably caused by a cleft in the choroid. The right eye could distinguish large objects, as a person moving about the room. Vision did not appear to be improved by any lens. Ordered to use a lens of +12 D for both eyes, and to get about as best he could.

On April 4th, 1877, it was noted that the sight of the left eye had been gradually improving since last report. He could see to go about anywhere without a guide. He reads D=3 with a lens of +D at twelve inches, V=$\frac{6}{18}$ with +12 D.

The ophthalmoscope showed some floating opacity in the vitreous and a white figure skirting the lower margin of the optic disc. There was also some corneal opacity. The vision of the right eye remained unaltered.

Remarks.—How was the refraction, which must have been diminished from the flattened condition of the cornea alone, made up? It would have been expected that the patient was highly hypermetropic, but he alleged that he could read the smallest print without difficulty for any length of time, and that he had never used glasses. It might be assumed that the increased convexity of the lens had made up for the flattening of the cornea, but this would not explain the fact that, after the removal of the lenses, vision was brought to the highest attainable acuteness by lenses which are usually the best suited for emmetropic eyes after removal of cataract.

NORTH STAFFORDSHIRE INFIRMARY.

SPINDLE-CELLED SARCOMA OF TIBIA AND FIBULA EXISTING FOURTEEN YEARS; AMPUTATION; RECOVERY.

(Under the care of Mr. FOLKER.)

THE following case, for the notes of which we are indebted to Mr. W. Frost, is interesting as showing that a tumour may exist comparatively harmless for years, and then assume a malignant or semi-malignant character. The nature of the tumour was obscure; from the early age at which it commenced, and its slow and painless growth, it might be imagined that it had been an enchondroma, but in this case some traces of its original character should have been discovered by the microscope.

James D——, aged twenty-two, was admitted April 17th with a tumour involving the lower third of the leg. Both bones appeared to be implicated, but the swelling was much more prominent on the outer than on the inner side. The tibia could be traced downwards to a little below the middle of the leg, where it appeared to be of normal size; immediately below this it became lost in the tumour. Inferiorly the swelling ceased abruptly at the ankle-joint, which was freely movable. The surface was, for the most part, as hard as bone, but in some situations it had a firm but elastic feel. On the outer side was a sinus leading

into a cavity in the interior, and from which issued a thin, purulent fluid, having a most offensive odour. The skin over the tumour was natural and movable, except on the outer side, where it was reddened, and appeared to be adherent. The circumference of the tumour at the centre was 18½ in. The shape of the growth is represented in the annexed woodcut taken from a photograph.

The patient was somewhat anæmic, but well nourished, and presented no signs of cachexia. He gave the following history. Fourteen years ago he fell whilst jumping, and sustained some injury to the leg. It was treated as a fracture by a chemist, and the splints were kept on for sixteen weeks. At the end of that time, a hard swelling, the size of a hen's egg, had formed on the outer side of the leg. From that time the swelling gradually increased. Until last Christmas its growth was very slow and painless; it was then as large as two fists. The growth then became more rapid and accompanied by aching pain. On April 28th Mr. Folker amputated the leg through the upper third of the tibia. The patient made a good recovery, the greater part of the wound uniting by first intention.

On making a section of the tumour, it was found to consist for the most part of a firm glistening tissue not unlike cartilage in appearance; throughout the mass were portions which had become ossified into very compact bone; these masses of bone were connected together, so that after maceration of a part of the tumour it had the appearance of a piece of bone with large irregular cavities. The surface of the tumour was in many places formed of bone, but the latter was deficient in many situations. The tendons of the peronei passed through canals in an ossified part of the tumour. Towards the outer side was a large irregular cavity, with firm walls, communicating with the exterior by a small sinus. The medullary canal of the tibia was natural to within two inches of the commencement of the tumour; from this point to the tumour it was filled with very dense cancellous bone. On entering the tumour the shaft of the bone widened somewhat, and all trace of the medullary canal was lost, it being replaced by a very dense compact bone. After being embedded in the tumour for about two inches and a half, the bone terminated abruptly. The condition of the fibula was very similar. Inferiorly the growth terminated abruptly at the ankle-joint, the astragalus being healthy. Microscopically the growth was found to consist of small spindle-shaped cells embedded in a stroma of fibrous tissue.

Medical Societies.

ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

Pathology of Tetanus and Hydrophobia.

THERE was a large attendance at the meeting of this Society on the 11th instant; Dr. C. West, President, in the chair. The paper of the evening was upon the Pathology of Tetanus and Hydrophobia, by Dr. Joseph Coats, of Glasgow. It embraced a full account of the minute morbid anatomy of these affections, both of which Dr. Coats held to be dependent on a blood-poison; and he contrasted them with the changes in acute tuberculosis. A prolonged discussion followed, in which a variety of opinions were expressed, Dr. West taking the opportunity to deprecate the growing tendency to a too exclusive study of disease from the side of morbid anatomy.

At the meeting, Dr. John Harley showed a case of Acute Atrophic Sclerema; and Mr. Hutchinson a remarkable instance of Symmetrical Ivory Exostosis of the Face.

Dr. JOSEPH COATS read a paper on the Pathology of Tetanus and Hydrophobia, of which the following is an abstract:—The paper first described the lesions met with. In tetanus the central nervous system shows hyperæmia and certain appearances in the neighbourhood of the blood-vessels. In the cord and medulla oblongata, pons, corpora quadrigemina, and corpus striatum, but chiefly in the two first named, there is a granular material around the vessels, probably an exudation. In the medulla oblongata it is noted that a longitudinal vessel in the posterior parts is particularly affected, and that here, as well as in other parts, there are occasional hæmorrhages. In the convolutions there is an exudation of a yellow fluid outside the smallest vessels, the medium-sized ones (which are those affected in the cord and medulla oblongata) having mostly escaped. In hydrophobia there is, in the central nervous system, an aggregation of leucocytes around the bloodvessels. In the cord, medulla oblongata, pons, and corpora quadrigemina, it is the medium-sized vessels which are so affected; in the convolutions it is those of small or capillary size. The salivary glands are infiltrated with leucocytes, which have special relations with the bloodvessels. The mucous glands of the larynx are similarly affected, though much less intensely. The kidneys are hyperæmic, with aggregation of white blood-corpuscles within them. The pathology of these two diseases is then discussed, and it is pointed out that there is a great similarity in the distribution of the lesions in the central nervous system, as well as a certain analogy in the kind of lesion. The special distribution of the lesion is compared to the localisation of the tubercles in tubercular meningitis, and is ascribed to physiological and anatomical peculiarities of the circulation. Attention is also drawn to the fact that in hydrophobia the lesions are not confined to the central nervous system, while in tetanus facts are deficient in this regard, but a parenchymatous affection of the liver, kidney, &c., is asserted by one author. The special localisation of the symptoms, in both diseases, in the tongue, throat, and neck, is associated with the special prevalence of the lesions in the medulla oblongata, and especially in the neighbourhood of the nuclei of the nerves, in the floor of the fourth ventricle, &c., it being pointed out that the principal nutrient vessel of the medulla is specially related to these nuclei of grey matter. It is concluded that in tetanus and hydrophobia we seem to have two different poisons, each of which, circulating in the blood, attacks the central nervous system. These agents irritate the nervous system, but as they are different in nature, so the kind of irritation they produce is different. There is, however, a remarkable similarity in the localities indicated by them, and these seem to be specially the spinal cord, medulla oblongata, and corpora quadrigemina; and, to a lesser degree, the cerebral convolutions. The irritation seems to centre in the medulla oblongata, and in a particular region of it, this localisation being probably determined by the anatomical and physiological relations of the nutrient vessels. The high temperature met with in hydrophobia, and sometimes in tetanus, is regarded as not inconsistent with these views.

Dr. ALTHAUS said that they were greatly indebted to Dr. Coats for his paper and for the valuable series of microscopical preparations accompanying it. The symptoms of tetanus point so much to lesion in the medulla oblongata that it was interesting to hear that Dr. Coats had found lesions there, although Dr. Lockhart Clarke had failed to detect them. He inquired whether Dr. Coats had examined the cervical sympathetic ganglia in hydrophobia, for in that disease many of the symptoms resembled the phenomena produced by section of the sympathetic; and he believed that some older observers had described changes in the second ganglion. He could not admit that the changes described by Dr. Coats were so characteristic as he seemed to think, for similar changes are met with in certain inflammatory affections—e. g., acute ascending spinal paralysis; nor without more clinical evidence could the view be accepted that tetanus depends on a special poison, whereas in

hydrophobia there can be no doubt as to the existence of a poison. This was proved especially by inoculation experiments, of which he had seen many when a student at Berlin twenty-five years ago. At that time there was an epizootic of rabies in North Germany, and Professor Hertwig performed many inoculations, which succeeded in about 50 per cent. of the cases, and many which did not succeed on the first did on subsequent and repeated inoculations, just as occurs often in vaccinia. Tetanus, on the other hand, has never been transmitted from one individual to another. It is true that epidemics of tetanus have occurred, but in such cases the same cause has affected several individuals—e. g., changes of temperature. On one night after the battle of Magenta as many as eighty cases of tetanus arose among the wounded. In fact, the difference between tetanus and hydrophobia was enormous, and they had but very little in common. Trismus never occurs in hydrophobia, the clonic intermittent convulsions of which contrasted with the persistent tonic spasm of tetanus.

Dr. DICKINSON said that, Dr. Coats having kindly shown him his specimens, he could testify to the appearances described in the paper, especially the exudation of leucocytes; and it seemed to him that the first noticeable change in the nervous centres of tetanus and hydrophobia was a change in the inter-relations of bloodvessel and nerve. This was true of many nervous diseases—such as chorea, diabetes, &c. He himself had observed masses of exudation around the bloodvessels in the spinal cord of tetanus; but he had seen the same thing in many other nervous disorders, so that he doubted whether it were possible by the microscope alone to discriminate between these various affections. The theory of the blood-origin of tetanus was advocated many years ago by Dr. J. A. Wilson, consulting physician to St. George's Hospital; and he (the speaker) had always thought there was much in favour of that view. Of hydrophobia there could be no doubt that the disease was produced by inoculation of a virus; and that a blood-poison was the source of traumatic tetanus seemed almost as certain, since it was invariably accompanied by an open wound. Added to which was a sort of incubation period in the interval that occurred almost constantly between the infliction of the wound and the development of symptoms. On many grounds then it seemed that tetanus should be regarded primarily as a blood-poison. Lastly, Dr. Dickinson said that the anatomical changes described in these diseases must only be regarded as a step in the series of pathological processes making up the disease.

Dr. GOWERS said that they must feel obliged to Dr. Coats for his preparations and fresh facts, for whatever view might be held as to his conclusions, he had brought forward important additions to our knowledge of these diseases. Especially was this the case with regard to his researches upon the affections of other organs than the nervous centres—e. g., the parotid gland and kidney in hydrophobia,—the latter might be compared with the early affection of the kidney in scarlet fever, described by Dr. Klein. Another point of value in Dr. Coats's paper was the identity in the lesion in the nervous centres in the dog and man in hydrophobia. The observations detailed favoured the view that there are lesions perfectly distinctive of hydrophobia from tetanus. Dr. Gowers had now examined the nerve-centres in six cases of hydrophobia, and in five of these the changes were so considerable and so similar as to appear to him quite characteristic, for he believed that no lesions in other diseases resembled them in both distribution and character. In each of the five cases there was, in the medulla oblongata, not only a dense massing of leucocytes around the bloodvessels, but an infiltration of the tissues with them, forming in places groups of such a closely-packed character as to warrant the term "miliary abscess" being applied to them. In fact, it seemed as if the process had only to advance a step further in order for the medulla to be riddled with foci of suppuration. The changes were far less extensive in the spinal cord. Unlike Dr. Coats, he had found the exudation of leucocytes to occur also around very small vessels—sometimes capillaries,—where they were not so readily recognised, because such small vessels are not limited by perivascular sheaths, and the cells, therefore, escape into the adjacent tissue. In the cases of tetanus that he had examined he had found changes similar to that described by Dr. Coats, but the changes were certainly not more intense in the medulla than in the cord; he rather thought they predominated in the latter. But, regarding the nature of the changes in tetanus, which Dr. Coats had pointed out were different from those of hydrophobia, the effect of severe congestion must be taken into account. Such congestion of all the organs of the body, from paroxysms interfering with respiration, would be more intense in tetanus than in hydrophobia, and it is probably for this reason that the extravasations of blood are more marked in tetanus, and might assist in producing the accumulations of granular matter observed around the bloodvessels in that disease. Moreover, the effects of mechanical congestion would be greater on organs which were already in a condition of increased functional activity, and, therefore, fully supplied with blood. As to the limitation of the granular material to the vicinity of the vessels, it must be borne in mind that the spaces around the vessels are the only spaces where granular material could aggregate, and this localisation of the granular material could hardly, therefore, be taken as evidence that the cause of tetanus acted through the vessels. In fine, Dr. Gowers could not help thinking that the lesions of the nerve-centres in the two diseases are in harmony with the current theories of their nature. Thus in tetanus it was generally held that the symptoms were due to the effect produced on the central nervous system by an irritated or inflamed nerve. In many cases an ascending inflammation had been traced in the nerve, and this was believed to excite the disease, although it was quite possible that some poison, such as that produced by changes in temperature, and analogous to the rheumatic poison, might predispose a subject to the development of tetanus, or even, acting alone, might induce the disease (as in idiopathic or rheumatic tetanus). Hydrophobia, on the other hand, is regarded as the result of a special poison which, circulating in the blood, passes from the vessels, irritates the nerve-centres, and produces the profound vascular lesions met with. In tetanus the comparatively slighter vascular lesions were more in harmony with stimulation by a peripheral irritation than with the notion of a poison circulating in the blood.

Dr. T. C. TURNER remarked that aggregations of leucocytes, even to the extent of the "miliary abscess," might be produced in a very short time, even after death. For instance, he had found, on examination of the stomach in three cases of sudden death, in subjects otherwise healthy, a large collection of leucocytes between and around the gastric glands. Such a change was no doubt due to congestion, sufficient to alter the vessel-wall, and allow of the exudation of leucocytes. In one of the cases—a healthy child, fourteen years of age, killed by injury to the head—there was also a small hæmorrhagic infarction in one lung, which he presumed was probably produced in the same way. On examining the nervous centres, kidney, and liver, from a case of hydrophobia, he had found in all these parts an appearance of exudation of leucocytes around all the vessels, and in some parts also infiltrating the tissues. The appearance was most marked in the grey matter of the cord, and he noticed that in the dorsal region the white matter was softened. In the cervical part there had been distinct hæmorrhages from one or two of the larger vessels; and a good deal of granular matter—probably the result of hæmorrhage—also existed. There was nothing particular in the brain; but in the kidneys, between the tubules, and in the liver, especially in the portal canals, there was a great increase in leucocytes, with clear matter between them. In another case he had found, in addition to the leucocytic infiltration in the spinal cord, a varying amount of exudation material in more or less defined masses, similar, in fact, to that recently described by Sir W. Gull and Dr. Sutton.

Sir JOSEPH FAYRER said that he had been profoundly interested and instructed by what he had heard, but at the same time much disappointed. It was true that he had heard much he had not heard before, but he had hoped also to have heard something about the diseases themselves—as to their phenomena, and what can be done to cure them. At present they are almost incurable; one of them, at least, is quite incurable. He had seen much of tetanus in the East, where it prevailed to a great extent endemically; but he would not trespass on the time of the Society in detailing his experience. He would only say that, in his opinion, idiopathic tetanus was very amenable to treatment, and

possibly traumatic tetanus also; and he hoped that subsequent speakers, more able than himself, would enlighten them as to the nature and treatment of the disease.

Dr. BUZZARD, referring to Dr. Coats's observation that special arteries of the nervous centres were most affected, said that this selective property of the hydrophobic poison was not more difficult to explain than the affinity of certain mineral poisons for particular tissues or organs. Thus arsenic, no matter in what way it be administered, acts especially on the skin and alimentary canal, mercury on the salivary glands, lead on the muscular structures and on peripheral nerves, and especially in particular regions of these. All this reminded them of Virchow's doctrine of special affinities, and the question arises whether such may not possibly be due to some chemical constitution of the affected regions by virtue of which these parts more than others attract from the blood substances for which they have an affinity. On this ground, and also in view of the fact pointed out by Dr. Althaus that the anatomical appearances were not peculiar to hydrophobia, he would ask whether all that could be gained from microscopical examination had not been attained, and whether it was not now time for the chemical analyst to step in and explain facts beyond the power of the microscope to fathom.

The usual hour for adjournment having now arrived, the PRESIDENT, remarking upon the importance of the subject, suggested that it might be worth while to adjourn the discussion to the next meeting, when they might have the advantage of hearing the views of Sir Joseph Fayrer and Mr. Curling (who had risen to speak) more at length.

Mr. CURLING suggested that the meeting might be prolonged for another half-hour to allow of the discussion being completed. This course being agreed to, he proceeded to say that he had listened with much interest to Dr. Coats's paper upon the appearances found in these diseases. There was one point which always struck him in considering the changes described in tetanus—changes upon which Drs. L. Clarke and Dickinson were in agreement. It was that the clinical history of these cases did not bear out the changes found; for these latter involved so much organic change in the nerve-centres as would, it might be supposed, have produced paralysis. But he had never seen a single case of tetanus in which paralysis occurred, even towards the close of life. He could hardly agree with Dr. Coats that the most frequent cause of death in tetanus was syncope. As a rule, the patients died from arrest of respiration through spasm of the glottis. The period of incubation was very different in the two diseases. In tetanus it was about from ten to fourteen days. In hydrophobia it varied from six weeks to as many months or even years; and it was an interesting question as to what had become of the virus during all the time that elapsed from the infliction of the wound and the development of symptoms. He was inclined to agree with Dr. Althaus as to the distinction between tetanus and hydrophobia. There was no doubt the latter was a blood disease. But it did not seem that the view of tetanus being a blood disorder was borne out by treatment. For in tetanus, if the case be taken early enough, and the nerve proceeding from the wound be divided, the disease may be arrested. Of course the wound may be so situated that it is impossible to do this, or at any rate without the sacrifice of a limb; but there are many cases in which it may be done with safety, often with the best results.

The PRESIDENT hoped that Sir Joseph Fayrer would favour them with some further remarks.

Sir JOSEPH FAYRER said he did not wish to enter into the whole subject; he might say, however, that he could fully confirm Mr. Curling's statement as to the manner in which by section of the nerve proceeding from the wound tetanus might be arrested. He instanced a case dependent on a wound in the palm, in which the symptoms were well marked, where division of the median nerve at the bend of the elbow was perfectly successful.

Mr. HOWSE was interested in finding that Dr. Coats believed tetanus to be due to a poison, for from a clinical point of view he had arrived at the same conclusion. For the last seven years he had rigidly carried out in his wards Mr. Lister's antiseptic principles, and in spite of that he had had about five cases of tetanus during this time. In all the wounds were remarkably similar, generally occurring when the patient had been dragged along the streets, and had dirt ground into the tissues to such a depth that it could not be removed; and such cases presented other symptoms more obviously due to blood-poisoning, so that he believed that tetanus was dependent on a blood-poison analogous to septic matter. One case was that of a lad who fell into a midden heap, and sustained a compound fracture of the leg, and the wound was filled with dirt, and was altogether in a most filthy state. An attempt was made to save the limb, but tetanic symptoms set in. Mr. Howse amputated through the knee-joint, and although the tetanus subsided, the boy died from pyæmia. Another case was that of a man who was dragged along for 100 yards by a train, and received a large lacerated wound involving the deltoid, with much dirt scraped deeply into it. Here in four or five days erysipelatoid inflammation set in, and two or three days later well-marked tetanus. In fact, these cases were most prone to tetanus, where foul material, such as London mud, was deeply ground into the tissues, and this he thought was strong evidence as to tetanus being due to a local poison. He was aware that idiopathic tetanus was instanced as an argument against this view, but he could not help thinking it to be perfectly distinct from traumatic tetanus; for of two cases of the idiopathic affection he had been called to see, one was cured by iodide of potassium, and the other by the green iodide of mercury. Whilst, as to cases of the traumatic variety, which had been cured by section of nerves, it might well be that the connective tissue of the nerve itself or its blood-vessels was the medium for the transference of the poison in such cases.

Dr. FITZPATRICK remarked that tetanus was not uncommon among horses, and many veterinary surgeons had successfully treated it by conia. He himself lost a horse from this disease last year. It died from spasm of the respiratory muscles.

Dr. GREENFIELD said that it was important to distinguish between facts of pathological anatomy and the pathology of a disease. The changes described by Dr. Coats had to a certain extent been recorded by other observers, but those observed in the cerebral convolutions were new. He must, however, venture to protest against our views of pathology being solely grounded upon what is seen with the eye, and he did not think that as yet the changes in the nervous centres in hydrophobia and tetanus—changes which, so far as his own observation went, were extremely variable—afforded any proof that they were any other than the results of irritation. Similar changes had been found in chorea and scarlet fever; and it was open to question how far some of them might not be the result of the same conditions—e. g., high temperature common to some cases of these affections—rather than essential to and characteristic of one disease in particular. Hence too much stress should not be laid upon their occurrence, as explanatory of the true pathology of these diseases.

Dr. JOHN HARLEY mentioned that in his experiments on the action of aconite upon the dog, he had been able to produce all the symptoms of hydrophobia, and had attributed them to extensive hyperæmia of the spinal cord.

Mr. JOHN WOOD, seeing that Dr. Coats had extended his observations upon the changes in hydrophobia to other organs than those of the nervous system, would like to ask whether he had examined the scar of the bite in such cases. Such examination might throw light upon the incubation of the disease, for, if anywhere, the virus was most likely to be met with in the cicatrix.

The PRESIDENT, in closing the discussion, called the attention of the Society, and especially of surgeons, to a large field of observation yet unexplored—namely, the tetanus of new-born children, so prevalent in some lying-in hospitals, as the Foundling at Paris. It was very prevalent at Dublin when he studied there, many years ago, but had been practically banished by improved ventilation. Such cases present all the features characteristic of tetanus in the adult, and their study might throw much light upon the nature and causation of the disease. He had only met with one case since that time, and that was in an infant born under most favourable surroundings. There was one other remark which he ventured to make, although with diffidence. Since he had had the honour of presiding over that Society he had been much struck with the growing tendency to ignore the results of clinical observation, and to look too narrowly into the changes observed in organs

by the microscope after death. He could not forget that in Sydenham's day morbid anatomy was almost unknown, and yet the knowledge of disease was great, for it was derived from the careful study of the phenomena presented in the course of the disease; and he feared that the tendency nowadays was to lay too much stress upon what one appeared to see with the eye, and so to study the one as not to see the other, and more important aspect; for surely more was to be gained in the treatment of disease from studying it when in progress than when its results were completed, and it was beyond interference. Nor did he find that these advances in the direction of post-mortem observation had done very much to put a stop to wild theories—theories as extravagant as those which prevailed a century or more ago. Then humoral pathology prevailed, and men talked of "fermentation of the blood," and the like; but now precisely the same class of explanations are started, with this exception, that in those days such explanations did not affect to be clothed in the garb of scientific knowledge. It seemed to him that there was a risk, in the presence of all the increase of improved scientific instruments, that we may be led away from the essential features of disease, and the progress of medicine be retarded. In searching for the causes of disease in this one-sided manner, we are too apt to lose sight of our special function as the curers of disease.

Dr. COATS, in reply, said that some misapprehensions which had arisen were doubtless due to the fact that the paper had only been read in part. He by no means asserted that the lesions described were the essence of either disease, but were only the evidence of irritation, probably a poison acting on the bloodvessels, and as these evidences differed so he inferred the causes of irritation differed. He recognised an absolute difference between the two diseases, holding only that both may be due to the action of some morbid poison. He thought the term "miliary abscess," applied by Dr. Gowers to large collections of leucocytes, not a happy one, for an abscess implies pus, and pus is a fluid; whereas in many conditions (e.g., cirrhosis of the liver) there is abundant infiltration of leucocytes, but not the formation of pus. Collection of small cells like leucocytes in the gastric mucous membrane was only an exaggeration of the normal lymphatic tissue of that organ.

Dr. TURNER said that the infiltration he referred to was of large collections of cells, which were much larger than the normal lymphatic tissue.

Dr. COATS said there was no destruction of nervous tissue, and therefore he would not expect to have any paralytic symptoms. Referring to the incubation of hydrophobia, he said it was not more wonderful than what occurred in acute miliary tuberculosis, from the infection of a caseous focus which may have persisted for an indefinite period. He had examined the cicatrix in hydrophobia, and in one case found evidences of irritation, although a long time had elapsed since the wound had been inflicted; but he had found no specific material in the scar. Lastly, he said that he had only approached the subject from the side of morbid anatomy and physiology.

The Society then adjourned.

MEDICAL SOCIETY OF LONDON.

Absorption of Fat, and its Uses.

THE ordinary meeting of this Society was held on the 10th inst., Dr. G. Buchanan, President, in the chair.

A paper was read by Dr. LAUDER BRUNTON on the "Absorption of Fat and its uses, with some Remarks on Fatty Degeneration." He began by referring to the feats of Johnson and Captain Webb in swimming across the Channel, remarking that the greatest difficulty they had to contend with was loss of heat, so that Webb's success may be attributed to a thick coating of subcutaneous fat, aided by the porpoise oil with which his skin was lubricated. In some animals in tropical climates the fat is collected in large masses at certain parts, as in the zebra, the yak, the buffalo, and the camel. In the camel the hump is firm and solid when the animal is well fed, but when insufficiently supplied with food it becomes loose and flabby. Whenever the fat assimilated is insufficient for the wants of the economy, the subcutaneous fat becomes absorbed in order to supply the waste of more important tissues. Fatty, starchy, saccharine, and albuminous articles are all capable of being converted into fat. The fats themselves are partially emulsified, as well as partially saponified by the pancreas, and, passing through the lacteals, mesenteric glands, and thoracic duct into the general blood-current, increase the amount of fat in the blood. Other articles of food will increase the proportion of fat, when not taken in excess. The late Dr. Hughes Bennett used to say: "The main causes of tuberculosis were the dearness of butter and the abundance of pastry-cooks, the poor not getting sufficient fat, and the upper classes disordering their digestion by puff-paste." The author thought that the instinct of those children who refused to eat fat was perfectly right, and said that if fat be swallowed under compulsion it would generally disagree; and in such cases the proper thing to do is to give fat in another form. The more finely the fat is subdivided the more is it enjoyed, and the more readily is it digested. A piece of solid butter swallowed alone would melt in the stomach, float about without undergoing digestion, and probably begin to decompose and yield acrid fatty bodies, which would irritate the stomach and cause vomiting. The best time to give cod-liver oil is an hour or so after, instead of immediately after, a meal, as it will then have a shorter time to stay in the stomach, and will pass out quickly into the duodenum. The oil is better given in the form of an emulsion with gum acacia, than with solution of potash or carbonate of potash, because the gum is little, if at all, affected by the gastric juice, whereas the potash will be neutralised, and its emulsifying properties destroyed, so that the particles of oil can again run together. Many opinions have been advanced regarding the ready digestibility of cod-liver oil. Some have sought for its cause in the fact that this oil contains propyline in combination with fatty acids, instead of glycerine, like most other fats. Others, again, have attributed it to the minute quantities of iodine, and others to the biliary matters found in the oil; the last seeming to be, by far, the most reasonable supposition. It appeared to the author that in bronchitis, both acute and chronic, a little cod-liver oil is much more serviceable than cough mixtures, as well as in phthisis, in which disease it is so generally employed. After a trial of various things, the author has found that fat bacon is one of the most satisfactory foods upon which to perform hard mental work. The nervous system, containing a great proportion of fat, must necessarily suffer if fat be deficient in the food. He believed that the glycosuria of gouty subjects was due to the same cause as the excessive production of urates—viz., deficient oxidation; for the sugar and the excess of uric acid may alternate in the urine, or both may be wanting, and then fat is deposited. Seegen has noticed that diabetes is often preceded or accompanied by an immense accumulation of fat; and the gouty glycosuria of middle age often occurs in very stout persons. Whenever the supply of oxygen to the tissues is diminished, either by depriving the blood of its red corpuscles or by lessening its flow to a part, deposition of fat or fatty degeneration is likely to ensue. This may be observed in women after excessive flooding or in the muscles of a paralysed limb, or in the heart when it has grown too large to be nourished completely by the coronary arteries.—Dr. MILNER FOTHERGILL agreed with the author, that some patients can take one form of fat, while other kinds are more readily digested by others. In his opinion, it did not matter which kind was taken.—Dr. LEARED mentioned a case of persistent vomiting due to pressure on the pancreas, in which globules of fat covered with crystals were vomited. He believed that oleine was better than margarin and stearine, which caused constipation; and hence thought the brown oil to be the best form to prescribe.—Dr. JOHN BRUNTON advocated inunction of olive oil in wasting diseases.—Dr. THEODORE WILLIAMS thought that the author should have laid more stress on the use of milk. He considered that the best time for taking cod-liver oil was immediately after food, and his experience was in favour of the lighter oil. He agreed as to the benefit derived from the early use of the oil in bronchitis, and stated that liquor ammoniæ was better than liquor potassæ for emulsifying the oil.—Sir JOSEPH FAYRER asked how far the use of animal oil, as whale-oil, seal-oil, &c., would prevent the occurrence of scurvy, and

referred to the immunity of the Esquimaux from that disease. Dr. DE HAVILLAND HALL advocated inunction of cod-liver oil; Dr. ROGERS, its emulsion in almonds; and Dr. JAGIELSKI spoke in praise of koumiss.—The PRESIDENT asked the author whether he had not laid too much stress upon the colour of the oil as an indication of the amount of bile it contained.—Dr. L. BRUNTON, in reply, stated that the colour of the oil was no test as to the amount of bile, except that the dark colour indicated a mode of preparation which favoured the liberation of the biliary principles. He differed from Dr. Fothergill, inasmuch as he thought that cod-liver oil was distinctly better than other oils. He agreed as to the benefit of inunction, and thought that animal oils were preferable to vegetable. He thought the chief factor in the production of scurvy was an excess of chloride of sodium in the blood. He did not think iodine had much to do with the efficacy of cod-liver oil.

OBSTETRICAL SOCIETY OF LONDON.

AT the meeting of this Society on December 5th, 1877, Dr. West, President, in the chair, Dr. ROPER showed a specimen of Calcified Fibroid Tumour of the Uterus, and a Tumour of the Placenta, believed to be an organised blood-clot or a growth intermediate between myxoma and fibroma.

Mr. C. S. REDMOND narrated a case of Secondary Puerperal Hæmorrhage. In this case hæmorrhage came on a month after confinement, and the woman lost a great amount of blood. A portion of placenta was found in the uterus and removed, and perchloride of iron solution injected. Some febrile disturbance followed, but the patient made a rapid recovery.

Dr. BASSETT read notes of a case of General Dropsy in the Fœtus, with Hypertrophy of the Placenta. During labour delay had occurred after the birth of the head. It was believed, after auscultation of the mother's abdomen, that the child was dead. Delivery was effected by drawing down an arm with the blunt hook. The child was greatly œdematous, the placenta large and hypertrophied, weighing three pounds and a half, and in twelve hours it discharged one pound of fluid.—Dr. JOHN WILLIAMS said that what we knew of the production of dropsy in the child, was the result of our knowledge of the mode of production of it in the adult. Heart disease never caused in the adult uniform general dropsy. That condition was always the result of a blood state. The effect of central obstruction was to cause œdema of the most distant parts from the heart. In the fœtus the placenta would suffer first. This would interfere with the flow of blood through that organ, and dropsy of the fœtus in consequence. The placenta acted not only as an organ of respiration for the fœtus, but probably also as a renal organ, and anything which interfered with the circulation in it, or increased the thickness of its tissues, would interfere with the elimination of excrementitious products from the blood of the child. This would bring about a blood condition similar to that met with in Bright's disease, and general anasarca in consequence.—Dr. EDIS thought that it ought to have been learned whether or no the child was dead without the aid of chloroform. The proper treatment was to have brought down an arm at once; the issue might then have been different.—Dr. ROPER said when a head had been born an hour or two without the body the probability was the child was dead; the delay is due to disease of the fœtus, ascites, or something else. In that case he would perforate the thorax and deliver.—The PRESIDENT regretted that no reference had been made to the researches of Simpson. New observations should be made and compared with those made before.

Mr. CHARLES ROBERT THOMPSON brought forward a case of Complete Rupture of the Perineum. The arm of a dropsical fœtus appeared through the anus of the mother, and ruptured the perineum completely. Deep sutures were at once inserted. On the third day they were removed. On the fifth day an aperient was given. The patient was perfectly recovered at the end of a month.—Dr. HAYES was in favour of the use of sutures in laceration of the perineum; he kept them in five days.—Dr. BANTOCK used silkworm gut.—Dr. WYNN WILLIAMS used the first material at hand.—Dr. MURRAY recommended lateral incisions of the vaginal orifice with a view to prevent rupture.—Dr. EDIS thought that the treatment of the bowels was an important point. It was important to ensure regular action from the first. He used silver wire covered with gutta-percha.

Dr. S. WORDSWORTH POOLE brought forward a case of Meningocele, complicating labour. In this case version was tried by the bipolar method, but ineffectually. The hand was then introduced into the uterus and version effected by the feet. At the back of the head was a large translucent cyst, measuring fourteen inches in circumference.

Dr. GERVIS narrated a case of Double Vagina and Uterus. The patient had been married four years. Suffered from dysmenorrhœa and dyspareunia sometimes. There were two vaginæ, separated by a septum, from one-twelfth to one-eighth of an inch in thickness. The left vagina was larger than the right. At the top of each vagina was a cervix, with a small os uteri. A probe could be introduced into the left for half an inch; into the right for an inch and a half. There were two uteri present. The septum between the vaginæ was divided by the galvanic écraseur, with a view of relieving her sufferings.

Dr. HENRY M. MADGE read notes on Extra-Uterine Pregnancy. Though there are differences of opinion with regard to the varieties of extra-uterine pregnancy, yet most cases may be referred to the tubo-ovarian and tubo-abdominal. The author was of opinion, however, that the placenta may be developed within the ovary, and also when attached to the peritoneum. Mr. Jessop's case was clearly abdominal. In such a case there is no decidua, and there can be no uterine sinuses nor utero-placental vessels—the so-called curling arteries and veins,—the size of crow-quills, passing from the peritoneum to the placenta, and, therefore, there must be an absence of what is called the sinus system. The membrane to which the placenta is attached allows of interchange of fluids, and the nourishment of the fœtus is thus provided for. Nothing is known of the structure of extra-uterine placentæ, but it is evident they must be all fœtal. Many questions were raised by such cases as Mr. Jessop's, where the fœtus was not surrounded by membranes, as what is the source of the liquor amnii, the origin of vernix caseosa, the disposal of the fœtal urine, &c.

Mr. LAWSON TAIT introduced the subject of Removal of Uterine Myomata by Abdominal Section, illustrated by four cases. The first operation was performed on account of recurrent intestinal obstruction due to a myoma. The patient recovered. The next was the removal of a rapidly growing soft myoma, reaching nearly to the xiphoid cartilage, in a woman aged forty-five. The tumour was freely movable, with but few adhesions. The pedicle was clamped. Patient died on the fifth day after operation. It was found that the uterine cavity entered the tumour for about six inches. The third case was that of a patient, aged forty-one, suffering from a multiple fibroid reaching above the umbilicus. There was no distress, except occasional pressure on the intestines. The author urged her to leave it alone. She determined, however, to have it removed, and the operation was performed on May 19th. The patient died on the 22nd. The last case was that of a patient suffering from a tumour of somewhat doubtful nature. A medical practitioner tried to tap it; the tumour then grew rapidly, and the patient's health suffered in consequence. The tumour was removed, the pedicle being clamped. The patient made a good recovery.—Dr. FANCOURT BARNES had assisted at an operation for the removal of a fibroid complicating pregnancy. The tumour was in the pelvis. There was great difficulty in removing it. Patient died in five or six hours.—Dr. PLAYFAIR said that in two of the patients operated upon the diagnosis was doubtful. In one it was done against Mr. Tait's advice. Why was it done? The course of fibroid is not usually fatal, and abdominal section should not be undertaken for its removal unless life was endangered.—Dr. ROUTH said the great point in this operation was how the pedicle could be secured. He had collected cases, and found that death was due to slipping of the ligature or clamp. The pedicle ought to be transfixed. The rule should be never to listen to what a patient says of the desirability of an operation. Unless there be danger the operation is not justifiable.—The difficulty Dr. AVELING had met with was in dealing with the broad ligament.—Dr. BANTOCK said the feasibility of the operation depended on

the presence of a pedicle. If the fibroid involved the body of the uterus, the operation was contraindicated. He recommended ligaturing the pedicle in small pieces by transfixion, each ligature linking to its neighbour, like the links of a chain.

PROVINCIAL SOCIETIES.

MIDLAND MEDICAL SOCIETY.—The first ordinary meeting of the session was held on November 21st; Dr. Sawyer, president, in the chair.—Mr. SPOFFORTH exhibited a specimen of Aneurism on the Posterior Mitral Cusp, projecting into the auricle as an oval tumour two-thirds of an inch by half an inch. Its principal opening was on the ventricular surface of the valve, irregularly circular, with smooth margins. It had also two smaller openings on the auricular surface, each with circular, thin, even margins. Mr. Spofforth also showed for Dr. Mackay a patient suffering from a peculiar form of Ringworm of the Body.—Dr. SAVAGE exhibited Tarnier's Forceps, and described the advantages claimed for it; and Mr. H. MORGAN (Lichfield) bore testimony to its value.—Mr. FURNEAUX JORDAN read a paper entitled "Suggestions on the Hospital Out-patient and other Difficulties." He thought that the enormous crowds of out-patients might be decreased to perhaps one-fourth of their present numbers by the medical staff rejecting as unfit cases for hospital treatment the trivial, the very chronic, and the manifestly incurable. He argued that hospitals should be used as places for consultation only, and by those who were unable to pay consultation fees. If this were the rule the numbers of out-patients would speedily diminish, with much benefit to the charities, the profession, and the public.—The PRESIDENT said that, while agreeing with many of Mr. Jordan's suggestions, he was diametrically opposed to some of them. In the discussion that followed several of the speakers advocated total or partial abolition of out-patient departments, and all agreed as to their universal abuse.

BRADFORD MEDICO-CHIRURGICAL SOCIETY.—At the November meeting, R. H. Meade, Esq., F.R.C.S., in the chair, Dr. WADDINGTON showed an extreme case of Hypospadias in a male child fourteen days old, in which the dribbling discharge of urine from the ureters, which opened externally, could be seen. The sphincter ani was imperfect, permitting small discharges of fæces on moving the child. All the other children of the mother were perfect. The mother mentioned an accident and anxiety as the probable cause. Operative interference for the present was deprecated.—Dr. GOYDER detailed the notes of a case of Typhoid, occurring in a young man aged twenty-three. The diagnosis was at first doubtful in presence of the symptoms, and the facts that the patient's mother had died of meningitis with effusion some years before, and a brother had suffered from obscure brain disease. The patient exhibited violent delirium from the first, and throughout the case absence of spots, diarrhœa, and tympanites. The pulse varied from 110 to 129, and the temperature from 101° to 104·5°. Sordes appeared on the teeth about the ninth day, and partial paralysis on the left side about the eleventh. The patient died on the fourteenth day of the illness. The post-mortem disclosed no lesion of the brain or its membranes, nor of the viscera, with the exception of the lesser intestine, which from the head of the colon to four or five feet up its length contained many large typhoid ulcers.—Dr. TIBBITS read a paper on Valvular Diseases of the Heart, which he illustrated by diagram and tables. He gave a condensed *résumé* of the subject, specially as to etiology and therapeutics. Under the former he showed that liability to these diseases in early life depended on increased nervous and lymphatic activity; that the left heart was more liable than the right to attack from its preponderating muscle and fibrous tissue, as well as its richer blood supply. Under treatment he discussed digitalis, and the contrary views as to its action in aneurism and arterial tension; its power to diminish and regulate the heart's action was acknowledged. Dr. Tibbits preferred aconite in violent functional palpitation, and recommended bleeding in engorgement of the right heart.—In the discussion which followed, several members took part. Mr. MIALL remarked that the question of dropsy had not been raised. It was alleged by some that heart disease by itself would not produce dropsy without disease of the liver or kidneys, or both. Alluding to the discussion on digitalis at Manchester, cited by Dr. Tibbits, he thought the majority of the speakers agreed. He (Mr. Miall) considered that digitalis at first increased arterial tension, but after the patient was fully under its influence it diminished it.—The PRESIDENT pointed out that dropsy, when present, was a concomitant of disease of the right heart, and explained it by the general congestion of the venous system affecting the liver and kidneys. Digitalis was useful in this state, and most powerful when combined with tonics and stimulants, as iron, in weak and irregular action.—Mr. WHALLEY thought digitalis first a stimulant and then a sedative.—Dr. TIBBITS, in his reply, combated the view that it was essential to the dropsy of heart disease that the liver or kidneys should be affected.

Reviews and Notices of Books.

Statistique Médicale de l'Armée Belge (Période de 1870–1874). pp. 271. Bruxelles: Fr. Gobbaerts. 1877.

THIS is an official Report on the health of the Belgian army for five years, corresponding in some respects with those of our Army Medical Department, which are presented to Parliament annually. The average strength of the army during that period was 37,349, giving an aggregate strength for the five years of 186,745. Their service was entirely within the limits of the kingdom; the results are, therefore, comparable with those for troops serving in the United Kingdom, with this important difference, however, that among the latter are many men whose health has suffered from service in our tropical colonies. We propose to compare the leading facts as regards sickness and mortality in the two armies during the same quinquennium, the results for the English army being compiled from the annual Reports. Before doing so, however, it may be necessary to observe that the arrangements for the treatment of the sick in the Belgian army appear to be conducted on the French model, and comprise hospitals, regimental infirmaries, and treatment in quarters (*à la chambre*). As all the sick in the British army are treated in hospital, the admissions in it must be compared with the total of these three groups.

During the five years 1870–74, the admissions into hospital and infirmary averaged 446 per 1000 of the strength, ranging between 392 in 1874 and 502 in 1871; the numbers treated in quarters amounted to 1525 per 1000 of strength, and varied from 1464 in 1874 to 1755 in 1871. The combined results show the proportion of cases to have averaged 1971 per 1000 of the strength, the highest having been 2279 in 1871, and the lowest 1779 in 1874.

During the same period the cases occurring among troops in the United Kingdom amounted only to 801 per 1000, and ranged between 841 in 1874 and 759 in 1873. The very great excess of cases in the Belgian army depends upon the large number treated in quarters, and may perhaps be deemed satisfactory evidence of the advantage of the British system. Treatment in quarters appears to afford an easy mode of avoiding duty on very trifling grounds. The proportion of cases among the Belgians is rather lower than among the French troops serving in their own country, as shown in their published reports.

The deaths in the Belgian army amounted in the five years to 1997, being in the proportion of 10·69 per 1000 of the strength. Of these 1356 occurred in hospital or infirmary, 206 in quarters, and 434 at their homes, chiefly on sick furlough, and one in prison. Of those which occurred out of hospital, 102 were the result of accidents, 66 by

suicide, 48 by disease, and in 425 the cause of death was not reported; the last were all on sick furlough. In the British army serving at home during the same period, the total deaths were only 8·59 per 1000 of the strength, including all deaths in and out of hospital and on sick furlough. The total deaths by suicide amounted to ·37 per 1000 in the Belgian and ·25 per 1000 in our army at home, leaving the proportion of deaths by disease and accidents at 10·32 in the former and 8·34 in the latter. The difference in favour of the British army may to some extent be due to the larger proportion of men discharged annually as invalids; but, for reasons to which we shall presently refer, there seems good ground to believe that it is in a great measure the result of a more satisfactory sanitary condition.

It would have been interesting to compare the causes of the mortality in the Belgian and English armies; but, unfortunately, these are not stated in the 434 deaths which occurred on sick furlough, and as they constituted between one-fourth and one-fifth of the whole, it is obvious that any comparison based on those which occurred in the hospitals and regimental infirmaries alone would be delusive. It may be reasonably presumed that such deaths were chiefly caused by chronic pulmonary disease, in many instances following typhoid fever. This is confirmed to some extent by the low rate of mortality from phthisis with the regiments, amounting only to 1·75 per 1000 of the strength, while in the British army, in which all the deaths are accounted for, it was 2·45 per 1000. The more acute diseases, however, will be little, if at all, affected by this omission. Typhoid fever is one of the most unerring indicators of defective sanitary arrangements. It will be interesting, therefore, to compare its prevalence and mortality in the two armies. In the Belgian army the admissions under that head during the five years averaged 10·27 per 1000 annually, and the deaths 2·34, while in the English army the admissions were 1·05, and the deaths ·25 per 1000, or respectively about one-tenth of the Belgian. These results carry conviction to our minds of the value of sanitary improvements and of the necessity for them in the Belgian army, as we can remember when the ratio of deaths from this cause in our army approximated to that shown in the Belgian report. The marked decrease is, without doubt, one of the results of the steady amelioration of the sanitary condition of our soldiers during the last five-and-thirty years.

Taking the admissions and deaths by all types of fever, exclusive of eruptive fevers, the proportion of the former has been 52·7 per 1000 in the Belgian and 37·9 per 1000 in the British army, and the deaths 2·87 and ·34 in the two forces respectively.

During the period included in the Report, small-pox prevailed as an epidemic in both countries in 1871–2, and a considerable number of cases occurred among the troops. The admissions in the five years amounted to 2·9 and the deaths to ·60 per 1000 in the Belgian army, and to ·91 and ·10 per 1000 in that of the British. Vaccination and revaccination are practised in both. In the Belgian army about 58 per cent. of the former and 31 per cent. of the latter are reported as successful. This is a higher ratio of success than in the English army, but may possibly arise from vaccination in infancy having been less carefully performed, or from a difference in the mode of recording the results.

The mean daily sick in hospital and quarters during the five years has averaged 35·51 per 1000 of strength in the Belgian and 38·56 in the British army. The difference probably arises from the large number of chronic cases sent on sick furlough in the former, as already noticed, when of course they cease to appear as sick in hospital, although they still continue non-effective from disease. The average sick time to each soldier has been 12·97 days in the Belgian and 14·07 in the British army, this result also being of course to some extent affected by the sick furloughs. The average duration of the cases treated has been 6·58 days in the Belgian and 17·55 days in the British army, which bears out to the fullest extent our remarks as to the facilities afforded by treatment in quarters (*à la chambre*) for avoiding duty on very trifling grounds. The average duration of the cases in hospital and infirmary was 21·08 days, while that of cases treated in quarters was only 2·33 days.

The Report furnishes some information respecting the ages at death, and the mortality in the different ranks; but, as the numbers serving at each age and in each grade are not stated, the results are of comparatively little value, and are not available for purposes of comparison.

There is a table showing the relative losses by death and invaliding in the armies of several other Powers as compared with the Belgian army, but we do not reproduce it as it contains several manifest inaccuracies. For instance, the mortality of the Belgian army is stated exclusive of the deaths out of hospital; the invaliding of the English army at home is put down as 0·36 per cent. (with a ?), instead of probably 3·6 per cent.

The Report contains much interesting statistical information in the detailed abstracts annexed to it, but we trust that future volumes will be rendered more complete by the insertion of the numbers serving as well as of those dying at each age and in each grade. The great prevalence and mortality of typhoid fever are well deserving the careful consideration of the Belgian War Department. The results obtained in our army at home and abroad, as detailed in the various Blue-books, and especially in the report of Lord Herbert's Commission and the annual reports of the Army Medical Department, afford very strong evidence of the advantage of such inquiries, and of the economy of money judiciously expended in removing causes of disease and organising a satisfactory health administration in the army.

HYDROPHOBIA.

To the Editor of THE LANCET.

SIR,—*Apropos* of hydrophobia, will you permit me to relate a fact—one which certainly "adorns a tale," and, I think, "points a moral"?

A few years ago, a lady of the highest distinction was bitten between the first and second knuckles of one of her fingers—I forget which, except that it was the left hand—by a favourite fox-terrier. She had just dressed for dinner, and for the moment she thought nothing of it. At dinner a dread came over her. There were guests, however. At the first convenient moment she withdrew. The poker was heated to a white heat, and, upon her maid refusing to be the operator, she herself (the maid steadying the "knob"), with the point, thoroughly seared the bite. She sent for me the next morning. "Did not like to disturb me so late; besides, *time* was everything." I said to her, "You are indeed brave. I never heard of such a case but once, and that was in fiction. The little dog is quite healthy, and *that* mark you will carry to your grave." "Yes, but I am *safe* now, am I not? and —— (her husband, who was away yachting) will be satisfied."

I little dreamed then, that in a year or two her beautiful, noble, useful life would be ended, and ended in a way little less sad than the death she so bravely secured herself against.

I send you, in confidence, the name of the lady, and, believing as I do that immediate and thorough cutting or *burning out* of the bite is the only sure preventive of hydrophobia, I think it likely that a case "in real life" may tend to encourage others to adopt—even if there is a doubt—measures which are no less necessary than they are unfortunately alarming.

I am, Sir, yours, &c.,

Dec. 8th, 1877. PAUL BELCHER.

THE LANCET.

LONDON: SATURDAY, DECEMBER 15, 1877.

THE BATTLE OF LIGATURES.

From recent discussions alone no one would imagine that the best modes of applying arterial ligatures and the most proper materials for their manufacture have been subjects of contention for at least one hundred years. Even as long ago as the middle of the sixteenth century there were not lacking signs of coming disputes and dissensions. When the illustrious French surgeon, AMBROSE PARÉ, desiring to discard the use of hot irons, melted lead, and boiling pitch for the arrest of hæmorrhage after amputation, tied the bleeding vessels, he was assailed by many of his contemporaries who were unwilling to abandon the cautery, and was denounced as a plagiarist and a dangerous innovator. Though ultimately compelled to acknowledge the authority of GALEN for the use of ligatures to stop bleeding from divided arteries, PARÉ did not give up his claims, but persisted that he had not learned his method from his masters nor from any others. Although PARÉ evidently did not know it, the ligature of wounded arteries, and even of arteries in continuity, had been known and practised many centuries before his time. CELSUS, who lived at the commencement of the Christian era, although ignorant of the difference between arteries and veins, spoke familiarly of the ligature for the arrest of hæmorrhage, and advised the practice of tying both ends of a wounded vessel and dividing the intermediate portion if necessary. One hundred and fifty years after, GALEN, who seems to have been the first to have observed that arteries as well as veins contained blood, also recommended it; and the records of later writers prove that the practice of tying bleeding arteries was never altogether given up. From CELSUS and GALEN the history of the ligature may be traced through the writings of ORIBASIUS, AETIUS, PAULUS EGINETA, to RHASES, AVICENNA, AVERROES, GUY of CAULIAC, LANFRANCUS, and others, into the fourteenth and fifteenth centuries, showing that it was employed not only by the ancients, but also by the surgeons of the so-called "dark ages." But the ignorance which everywhere prevailed respecting the nature and structure of the arterial walls, and of the processes by which wounded vessels are permanently closed, vitiated the results which attended the use of the ligature. Secondary hæmorrhage and tetanus were frequent, and few men had the courage to tie a wounded bloodvessel.

ALBUCASIS, a bold and skilful operator at the end of the eleventh century, notwithstanding his knowledge of the ligature, has left on record a confession that from the fear of hæmorrhage he once refused to amputate a man's hand, and adds that the man afterwards performed the operation himself. Under such circumstances the application of the actual cautery was deemed to be upon the whole the simplest and safest mode of stopping bleeding from wounded vessels, and scarcely any other means were employed, when GERSDORF, of Strasburg, in 1535, and AMBROSE PARÉ, about thirty years later, practised ligature of the divided vessels after amputation. But even PARÉ's acumen failed to discover the true principles which should govern the application of the ligature. He taught that it was not necessary to be too careful to tie only the vessel, as no accident could arise from including bits of muscular or other tissue within the loop of the ligature; he even affirmed that the vessels were more easily consolidated thereby. Experience soon showed that he was wrong in this. When nerves were ligatured great pain and spasm were frequently produced, and sometimes even tetanus; and when other soft tissues were included the ligature often slipped before the artery was sealed, and secondary hæmorrhage ensued.

By many of PARÉ's successors the ligature was condemned as much as it had been by his contemporaries. FABRICIUS AB ACQUAPENDENTE and HILDANUS, the surgical oracles of the seventeenth century, were both opposed to the ligature, on the ground that it was not only tedious and uncertain, but that it called forth dangers, such as inflammation and convulsions, which were unknown to the cautery; and Dr. ALEXANDER READ, in his lectures delivered at the Barber-Surgeons' Hall in the year 1630, characterised PARÉ's proposal as "a troublesome and dangerous toy." J. L. PETIT, in 1731, while allowing that hæmorrhage could be perfectly controlled by the ligature, pointed out that it caused great pain, convulsive movements, and sometimes spasm of the stump, which was often fatal either of itself or because it caused hæmorrhage by the extraordinary uncontrollable movements. He therefore preferred double compression applied along the course of the artery and on the surfaces of the wound, as more conducive to the formation of the blood-clots, by which he thought hæmorrhage was permanently arrested. About the same time the Royal Academy of Surgery in Paris, without actually condemning the ligature, accorded great favour to styptic hæmostatics, such as the agaric of oak of MORAND. SAMUEL SHARP, on the other hand, writing in the year 1750, declared the alleged ill consequences of tying a nerve with the artery to be imaginary.

An important advance was made by DESCHAMPS in 1797, when he proposed complete isolation of the artery, but the secret was still undiscovered. PETIT, DESCHAMPS, FORSTER, and DESAULT, all preferred flattening rather than true circular constriction for large arteries. Believing that if a fine ligature were applied sufficiently tight to efface the calibre of the vessel, it would rupture the arterial tunics and induce suppuration with premature fall of the ligature, these eminent surgeons compressed the artery with a large ligature against a roll of wood, charpie, or agaric of oak. Meanwhile a fresh impetus had been given to the study of the ligature when HUNTER, in 1785, tied the femoral artery for popliteal aneurism; but even HUNTER was ignorant of the action of the ligature, and jeopardised the success of his operation by exposing the artery for a certain extent, and applying no less than four ligatures, only the lowest of which was made to obliterate the vessel.

The best and safest mode of tying arteries was still undiscovered, and from this point experiments were made in two directions. SCARPA, following the ideas of the French surgeons, and believing the internal tunic of the arteries to

be serous membrane, sought to provoke adhesion, without rupture and ulceration of the walls of the vessels, by compressing them with broad flat ribbons against a small cylinder of linen. VEITCH, on the other hand, had, during the years 1803 to 1805, found the safety and advantage of using small ligatures in all cases, though he did not understand the changes which such ligatures induced. These changes were, however, soon to be explained and accounted for. The publication in 1805 of DR. J. F. D. JONES'S remarkable work on Hæmorrhage threw a new light on the anatomy and surgery of the arteries, and speedily revolutionised surgical practice. DR. JONES proved to demonstration that the dread of damaging the coats of the vessel by the ligature, which had haunted the minds of surgeons for two hundred and fifty years, had been the chief if not the only cause which had militated against the success of the ligature as a hæmostatic or as a means of curing aneurism.

Next week we propose to discuss some of the modifications in the practice of the ligature which supervened on the appearance of DR. JONES'S work.

PENDING the long deferred judgment of the Select Committee appointed to investigate the condition of the insane and alleged lunatics, there is a sphere of usefulness open to charitable enterprise which might in itself be made to constitute a large measure of ameliorative reform. Scarcely a week passes without the record of some melancholy occurrence of which the sudden, or only half-suspected, derangement of a mind, previously healthy, has been the cause. At first sight, the majority of such cases seem to fall under the description of instantaneous aberrations; but, on closer inquiry, the outbreak is nearly always found to have been preceded by symptoms more or less distinctive, and which have, in fact, awakened the anxiety of friends and immediate connexions who were, however, powerless to interpose. The moment such misgivings arise, there is a double need for action. It is in this preliminary stage of mind-disorder that judicious treatment is most urgently required, and the victim of nascent disease should be under especial protection. Nevertheless, there is practically no course open to the relatives of a person so placed, except that from which affection must recoil, and which, in fact, would probably, in a considerable proportion of instances, precipitate the calamity it was desired to prevent. We may take it for granted that no change in the law, or modification of public opinion and private feeling, will ever lead to a practice of removing men and women to asylums the instant they present indications of approaching mental derangement. The Select Committee on the Lunacy Laws may, possibly, recommend, and the Legislature will perhaps in its wisdom provide for, the establishment of probationary retreats, without certificate, either in connexion with asylums or apart—we have already expressed our preference for the first-named arrangement; but this measure, useful as it must prove, can have no immediate bearing upon the difficulty to which our attention is now limited. Before any question of removal arises, and in cases where it would not be seriously entertained, the full force of this embarrassment is felt. What is to be done with a person who, although certainly not the victim of developed insanity, is in a condition unsatisfactory and unsafe?

In the majority of cases of self-injury under the influence of what is loosely called "temporary insanity" there is a stage of uncertain duration in which the victim struggles with the impulse of his morbid mind. If he recovers control the transitory condition is forgotten or unconfessed; if he lingers after an outbreak, the catastrophe will generally be found to have restored the mental equilibrium or completely overthrown the will. It is at the moment of felt weakness and incompetency, when the mind is turned into a chaos of wild and worrying thoughts, and plagued with distorted views of life and futurity, part fact and part fancy, that the bewildered spirit yearns for succour and stands in need of protection. It is doubtless the fact that this hideous mental excitement, or appalling despondency, is in most cases the product, direct or reflex, of physical disease; but it exists, and it would at least facilitate the treatment of physical causes if it were only possible to minimise the suffering and peril of these mental effects. Nothing is more abundantly attested by experience than the fact that it rarely, if ever, happens the immediate relatives, friends, or acquaintances, of a man or woman so distressed and endangered, have the wit or the power to help in this emergency. The well-intentioned but clumsy efforts prompted by intense personal regard or general kindness not unfrequently increase the evil they strive to mend! On the other hand, it must recur painfully to physicians who have been brought into close contact with persons in this condition that if the soothing influence they have been able to throw over many a mind disordered, perhaps diseased, could have been prolonged, dire calamities might have been averted. There are few more poignant regrets than those awakened by the recollection of cases in which temporary relief has been afforded, and there was good reason to believe it might have been carried to the extent of proving curative had circumstances allowed the ministration to be continuous. The tendency of recent "progress" in relation to the treatment of insanity is, unhappily, to underrate the value of mental influences. In a well-founded dread of "isms" we are rushing to the other extreme. Chloral is made to do duty for the soothing effect of wise sympathy, and doses of bromide of potassium are substituted for the cheering and potent influences of a healthy and well-ordered mind. It is easy to set aside these misused and therefore misunderstood elements of the mental pharmacopœia, and there is a widely prevailing bias in favour of their abandonment. CONOLLY spoke much of their usefulness in the earlier years of his practice, but obviously lost faith in their efficiency as time advanced. It is the custom to assume that he grew sceptical of the value of "moral treatment" as he gained experience. There is another hypothesis which deserves, at least, some consideration. Perhaps, in the daily increasing business of routine duty as a physician practising among the insane, he had less opportunity of bestowing thought on purely mental agencies, and so lost faith in the influences on which at the outset he almost exclusively relied!

This brings us to the consideration we desire to urge, and points to the suggestion it is our immediate purpose to offer. The physician can never hope to carry out a matured plan

of "moral treatment" by his own individual agency, nor is it necessary or desirable that he should make the experiment. It would be quite as easy to train a corps of nurses, male and female—selected from the several grades of society, so as to be suitable for work among divers classes of the community—as to instruct and qualify attendants for the physically disabled and sick. If a staff of men and women skilled in the management of the mentally disordered could be instituted, wholly disconnected with any asylum, and in no way associated with the superintendents or proprietors of madhouses—in a word, untainted and unprejudiced by the prevailing system of lunacy practice—their aid would be sought by practitioners and friends, in not a few cases, we believe, by the sufferers from mind disorder themselves, and the service rendered to humanity in its hour of need and humiliation would be incalculably great and salutary. It seems strange that when energy and enterprise are seeking a new field for exercise, the development of a class of experts in mind ministration has not been attempted. The introduction of asylum attendants into private families is not, on many accounts, to be desired, nor do we think the persons trained for this service in mental cases ought to have had any previous connexion with institutions for the insane, or to be versed in the discipline of such establishments. All that it is necessary for them to know might be taught without their introduction into schools where more of evil than good is to be learned, and for which they should have no sort of affection. We throw out the suggestion for mature discussion and thought. If wisely carried into effect, it would meet a great and pressing need. Many a serious or fatal calamity would be prevented by the assistance of a "friend" so skilled, and, if experience may be trusted, not a few cases of mental derangement, which now develop rapidly and end in confirmed insanity, might be arrested at the outset and happily cured.

THE discussion upon the pathology of tetanus and hydrophobia, which took place at the Medico-Chirurgical Society on Tuesday last, has again drawn attention to two of the most obscure and formidable diseases in our nosology. The interest manifested in the subject might well have been turned to account in introducing a more prolonged debate, in which the numerous observations which have been made on these diseases should have been brought, as it were, face to face, and so far as our present knowledge goes, we might have been better enabled to formulate a definite pathology. We have so recently discussed in full the pathology of hydrophobia, that we may turn our attention especially to that of tetanus, a disease almost equally obscure in its etiology and pathology, and but a few shades removed from hydrophobia in deadliness.

The grounds for a study of the pathology must, as in all cases, be drawn from our knowledge of the causation, the clinical history, and the morbid anatomy of the disease, combined with physiological research and the analogy of other diseases. To take up all these at once would be beyond the limits of our space, and we shall put the etiological and clinical facts aside for the present, to consider the various theories which have been held, and the light afforded by pathological anatomy. At the present time it may be said that all the views which have been held may be supported by arguments drawn from physiological experiment, the analogy of other diseases, and the action of poisons; yet none of them fully coincide with our knowledge of the clinical facts, nor can we furnish the connecting link between observation and experiment. It may be that the various forms of tetanus are really so many distinct diseases; that tetanus is but a combination of symptoms which, like paralysis or epilepsy, may depend on a number of morbid conditions, each with a distinct course and mode of action—in fact, that trismus nascentium, traumatic tetanus, and the rheumatic or idiopathic forms, are not only due, as most would admit, to differing original causes, but that they act upon the nervous centres and set up the changes which give rise to symptoms in various ways, so that the pathology of each is essentially distinct. Provisionally, at least, it seems desirable that this view should be entertained, for one of the great difficulties in deducing any rational explanation of the phenomena lies in the impossibility of framing any one theory to meet all these classes of cases. Nothing would be lost if each class of cases were worked out separately and independently, for in this way the ultimate central cause could be independently arrived at.

The remarkable change in doctrine which was shown by the views of a number of the speakers at the Medico-Chirurgical Society is a proof that the current of opinion is setting in favour of the blood-poison theory, in spite of the serious objections, both experimental and clinical, long ago raised against it. Dr. COATS, as a corollary of his valuable pathological researches, Dr. DICKINSON, Mr. HOWSE, and Dr. BUZZARD all spoke in its favour; nor was any strong objection raised against it, except that of Mr. CURLING and Sir JOSEPH FAYRER. Yet we doubt not that had the discussion proceeded others would have adduced equally strong arguments against this view.

Of the large number of hypotheses which have been entertained to explain the phenomena of tetanus, one of the most important is that which we may call the humoral or septic. According to this the disease is induced by the entrance into the blood of a poison which is generated (in traumatic tetanus) in the wound, and acts by a special elective affinity on the spinal cord and medulla, perhaps also on the motor and other centres of the brain. The generation of this poison is held to depend either on conditions of the wound itself, on that of the system in general, or on external causes of a septic nature, or having power to produce septic changes. The emotional and moral conditions which seem in some cases to favour it, the alternation of heat and cold, and the presence of foreign bodies of an irritating nature in the wound, are regarded as so many stimuli to the production of this poison. Of its nature many views are held, some believing that it is specially connected with the decomposition of nerve-tissue, and others that it is analogous to the poison of pyæmia. Most believe that it enters into the blood circulation, but there have not been wanting those who have held, following the old theory of CARUS, that there existed a nerve circulation, and that the poison was actually transmitted by the nerves themselves—a view hypothetically resuscitated by Mr. HOWSE. But of these and other phases of the septic

theory there remains the fact that they are all hypothetical—that, if true, they are not proved, nor even certainly indicated by facts. But if the poison does thus, by the medium of the vessels or lymphatics or otherwise, reach the nerve-centres, in what way does it act upon them? Here, again, a variety of theories suggest themselves. Does the poison act directly on the centres, either as an irritant producing nervous discharge, or as a mere excitant setting up a condition of excessive reflex excitability, or does it act on the bloodvessels first, chiefly in certain regions, and induce changes in the nerve-cells as a secondary result? The latter view is supported by Dr. COATS on the ground of his microscopic observations, and by Dr. DICKINSON on similar and other grounds.

Before we consider the facts which tell for or against this theory, we may briefly advert to the most important of the other hypotheses—that, namely, of nerve irritation. According to this, the irritation of a peripheral sensory nerve-filament, or mixed nerve-trunk, produces the condition in the nerve-centres of the medulla and cord which leads to the disease, and this condition depends on an exaggerated reflex excitability or direct reflex excitation. At the present moment we shall not inquire what are the centres affected, or as to the exact mode of affection; for, whether we adopt the view of paralysis of the cerebral centre of control of reflex action of SETSCHENOFF, or Dr. RINGER'S ingenious theory of lessened resistance, or the idea of excessive irritability of bulbo-spinal centres, or, as some have suggested, of sympathetic ganglionic centres, the starting-point of the stimulation may be the same. This question may best be reserved till we have considered the symptomatic phenomena of the disease.

It is a curious fact that the two schools of thought—the humoral and the nervous,—by whatever minor differences of detail they may be separated amongst themselves, appear to number on either side a majority either of physiologists or pathological histologists, the latter especially inclining to the humoral theory, whilst the former are, with few exceptions, in favour of the theory of nervous irritation. In addition to those pathologists whom we have mentioned, BILLROTH'S name is conspicuous as a champion of the humoral theory, whilst on the other side are the names of MARSHALL HALL, BROWN-SÉQUARD, VOLKMANN, BERNARD, VULPIAN, WEBER, and many others.

The pathological anatomy of tetanus has been very fully worked out with regard to the spinal cord and the peripheral nerves in the neighbourhood of the wound, and the changes in these may be very briefly summarised. In a considerable number of recorded cases there has been found some excessive vascularity of a nerve-trunk, or various conditions of inflammation, from slight hyperæmia and exudation to actual suppuration, extending upwards for some distance; and, in some few of these, an irritant body has been found in direct relation to the nerve. In some very few cases the inflammatory condition has been found to extend as far as the cord. The cord itself with the naked eye has, in many cases, been observed to be normal, in other instances small hæmorrhages occurring either along the vessels or in its substance. Microscopical examination, as shown by the researches of LOCKHART CLARKE, DICKINSON, ALLBUTT, MICHAUD, and many others, usually discovers changes in connexion with bloodvessels, consisting in engorgement, hæmorrhagic or fibrinous extravasation, exudation of leucocytes, and more or less granular disintegration of the nerve-tissue, with also, as was especially noted by MICHAUD, a marked proliferation and exudation around the central canal, and in the grey commissure. Dr. LOCKHART CLARKE, who was, we believe, the first to study these changes systematically, regarded them as due to a morbid state of the bloodvessels, but he showed also that they could not be regarded either as the cause of the spasms, or as produced by the functional excitement. And, so far as we know, no one has materially extended his observations, or been able to elicit from microscopic examination any further clue to the pathology of the disease.

It will be needful to return to this subject, so we shall at present only briefly indicate the chief arguments which make for or against the two great hypotheses. In favour of the septic theory may be urged the analogy of the results of some poisons, notably strychnia and the poison of hydrophobia; the evident effects on the bloodvessels, as seen with the microscope; the difficulties in explaining localisation on the nervous theory; the occasional endemicity of tetanus, or its concurrence in several cases together; its reputed production by wounds with arrows poisoned with putrid flesh; and the dependence of trismus nascentium on insanitary conditions. Against it are urged the great rapidity of onset and death in some cases where no decomposition can be assumed; the entire failure to inoculate the disease, or to produce it, as in ARLOING and TRIPIER'S experiments, by injection of a large quantity of blood from an animal with tetanus into a healthy one; and, on the other hand, the facts of direct experimental production of tetanus by nerve irritation, and the cure of tetanus by removal of an irritant body or by nerve section, which could not influence the action of a poison already formed.

Against the theory of nerve-irritation are the difficulties due to the peculiar localisation of the reflex spasm, its commencement in relation to centres far distant from the immediate origin of the nerve—often, indeed, the region of the irritated nerve being but little affected, and no direct reflex action induced. The absence of evident changes in the nerves, in many cases, is also thought to be opposed to this view. Moreover, though it is well known that numerous experimenters have failed to evoke tetanus by experimental irritation of nerve-trunks, it has been shown by WEBER and HEIDENHAIN that the slow irritation of a nerve by special methods does produce all the phenomena of tetanus. These experiments are conclusive as to the possibility of nerve-irritation alone giving rise to the disease, and establish this as one, at least, of the methods of its origination.

PROF. TYNDALL, in a letter addressed to the Royal Society through Prof. HUXLEY, dated from Alp Lusgen, containing the results of certain experiments bearing on the development of bacteria, is sanguine enough to state that the question of "spontaneous generation" is practically set at rest for the scientific world. We fear the news is too good to be true, and that much yet remains to be done before the

last note in that controversy is sounded. In view of the differences of opinion that exist, not only between the two great camps of the heterogenists and panspermists, but also amongst those who are committed to one or other of these views of the origin of bacteria, it may be instructive to state what is positively known at present in regard to these minute organisms. Placed by Professor HAECKEL in his "Regnum protisticum," which receives and embraces all organisms rejected both by the botanist and zoologist, bacteria may be regarded as unicellular, non-nucleated bodies, living in solutions of animal and vegetable matter in certain stages of their decomposition; but whether inducing that decomposition, as most experimenters believe, or merely associated with it, is uncertain. They vary in form, sometimes being spherical, as in Micrococcus, which appears in the earlier stages of putrefaction, and in which the spheres are connected by an intercellular substance that is confluent with the cell-membrane of each plastide; sometimes, as in Bacterium termo, being dumb-bell-like, and appearing in the later stages of decomposition. The movements of organisms of this form are active as compared with those of the Micrococcus, and, according to Messrs. DALLINGER and DRYSDALE, are effected by means of flagella attached to the opposite poles of their body. Another form of bacterium is the Bacillus, which, at first forming short and thick rod-like bodies, become ultimately elongated and slender. These exhibit tolerably active movements, and may be seen in the form of chains; and yet other varieties or perhaps species, are the delicate-jointed Leptothrix filaments, with their slow undulating motion; and, lastly, the Vibrio and Spirillum forms. Those that are most interesting in a professional point of view are the Spirillum, found in large numbers in the blood during the active stage of recurrent fever; the Bacillus anthracis, which occurs in the blood in cases of malignant pustule; and a motionless species of bacillus found in the blood in splenic fever.

It is evident, then, that under the general term bacteria we have to deal with numerous forms of low organisms, the life history of which has been in no one instance completely worked out, so that it is uncertain whether these forms represent different species, or are merely the modifications under different conditions of one polymorph common to all. Here and there, indeed, a fact has been made out in regard to their mode of reproduction which, however, affords little aid to the understanding of their wide dissemination and constant presence in the air, if the pangenetic theory be correct. In Micrococcus reproduction appears to be effected by fission, which, if incomplete, leads to the formation of "rosary" or necklace-like" chains. In the Bacterium termo it is accomplished by fission chiefly taking place in the longitudinal direction, the resulting cells either separating at once, or, owing to the swelling of their cell membranes, forming a jelly-like mass or colony designated by COHN the "Zoogloea" form. The juxtaposition of such cells on the surface of a decomposing infusion constitutes a pellicle, the "Mycoderma" of PASTEUR.

All experimenters seem to be agreed that decomposing organic substances are the appropriate nidus for the development of bacteria, and the balance of evidence is in favour of the view that the ordinary atmosphere of towns is charged with particles the access of which to organic infusion leads to the development of bacteria, especially if the temperature be about 100° F.; but whether these particles are true spores, or merely, as some German has called them, "splitterchen" of the parent body, is at present unknown. In either case their exiguity must be extreme. No better evidence of the influence of pure and impure air on the development of bacteria can be desired than the experiment recorded by Prof. TYNDALL in his letter to the Royal Society, and the account of which he repeated in his lecture at the London Institution last Monday evening. Of fifty flasks containing various organic infusions, after having been sterilised by boiling, twenty-three were opened in a hay-loft, and the remaining twenty-seven (with special precautions that the air should be uncontaminated by his own presence) on the edge of an Alpine cliff. Both were then placed in a warm room, with the result that twenty-one of the twenty-three flasks opened in the hay-loft became speedily filled with organisms, whilst all the flasks opened on the edge of the precipice remained clear as distilled water. The differences of opinion between Dr. BURDON-SANDERSON and Prof. TYNDALL appear to be of minor importance, turning as they do on the meaning of the terms "germ" and "structure." On the one hand, it matters little what we term the particle capable of performing reproduction, if we are agreed that it possesses this power; and, on the other, it is perfectly obvious that a particle which is capable of reproducing its parent must possess a very definite molecular, if not organic, structure. The recent experiments of Messrs. DOWNES and BLUNT seem to show that light is inimical to their development. The temperature which poves fatal to adult bacteria is probably about 120°, but the spores or germs are capable of resisting three hours' ebullition according to TYNDALL, and a temperature of 300° F. according to DALLINGER. It is certain that a slightly acid solution is far more easily sterilised than an alkaline one.

When all is said we cannot but think that a wide field still remains to be cultivated in regard to these minute bodies, and though we hold that all analogy is strongly in favour of the doctrine of pangenesis, we yet have a word of encouragement for Dr. BASTIAN, who has stood his ground as a defender of the theory of spontaneous generation with remarkable tenacity, and whose experiments have always been suggestive, though hitherto they have not yielded results decisive on the point in question.

Annotations.

"Ne quid nimis."

THE SENATE AND CONVOCATION OF THE UNIVERSITY OF LONDON.

We have called attention to the fact that the reply of the Senate of the University of London to the deputation sent from Convocation through the Annual Committee, to request it to desist from action under the Russell-Gurney Act, was far from satisfactory. The Annual Committee, however, thanked the Senate for their reply in terms which will be found in another page, and there also it will be seen that the Senate declines to be thanked for that which it has not done—for abandoning the permissive Act. The

Senate states plainly that it has come to no resolution as to its future course. Under such circumstances, we do not see how it could have done otherwise than decline the vote of thanks, and it would have, in any case, been better had the Annual Committee limited itself to thanking the Senate for its courtesy in receiving the deputies. But the general tone of the Senators' last reply is as unsatisfactory as that alluded to above. We are at a loss to understand how it can be said that "the Annual Committee expressed the opinion that the objects desired in common by the Senate and Convocation may be obtained in a manner to which neither party objects," &c. The deputation expressed no opinion whatever, and, had they done so, would have exceeded their duties. They carried a simple message, requiring only a simple answer (which, however, they did not get), and we are sorry to be obliged to say that the Senate has employed useless quibbles, and has assumed a good deal in its communications with Convocation through the Annual Committee. Because Convocation has on two occasions voted the desirability of admitting women to degrees, it is no more bound or committed by such votes than the Senate, which a short time ago voted the non-desirability by a large majority. We have no wish to write a word which would foster a *tu quoque* squabble between the Senate and Convocation; but this can scarcely be avoided unless each body pursues a straightforward policy. To our mind it is perfectly plain that—the Russell Gurney Act notwithstanding—Convocation will and must exercise its fair share in the settlement of the vexed question. It is true that the Senate has not in an outspoken manner admitted the rights of the graduates, but its actions within the last few months will be a record in the future of their admission of these rights, and will tell as strongly as anything entered on the senatorial minutes. Therefore, far better would it have been for the peace of the University had the Senate declared that women shall not be admitted to the University degrees without the consent of Convocation. Surely the Russell Gurney Act must by this time be as obnoxious to the majority of the Senate as it has long been to the majority of Convocation, and it would have been a graceful act on the part of the Senate to declare it permanently shelved. For there are many graduates who believe that the Russell Gurney Act is being held *in terrorem*, and the ambiguous reply of the Senate on December 7th will not help to remove this belief. We do not share in it, and are of opinion that the declarations made outside by several of the supporters of the women in the Senate, to the effect that virtually the Russell Gurney Act is abandoned, are strictly exact; but such declarations are by individuals only. They show, however, in the strongest possible way that, seeing the critical condition of the University, and the many doubts which exist, the Senate should as a body have made them. In adopting the permissive Act the Senate acted up to their rights; but their rights came to them by accident, so to speak, and we question whether any Parliament would have given the Senate such rights, had it understood that it was thus depriving the graduates of those powers which, after mature deliberation, had been granted to them by charter. We trust that the members of Convocation will, when the charter is submitted to them in January next, vote in a full consciousness of their rights and dignities. It is the case that many questions besides the existing privileges of Convocation have arisen in consequence of the unfortunate vote of the Senate in February last. We shall not dwell on them, but simply repeat that we hope the graduates will maintain their present privileges, and claim as one of their rights a freedom to accept or to refuse a supplemental charter admitting women to degrees.

THE SANITARY STATE OF SIDMOUTH.

IN THE LANCET of Oct. 6th we gave a brief summary of an official report lately made to the Local Government Board by Mr. Netten Radcliffe, one of the Board's medical inspectors. Mr. Radcliffe's description of the condition of this beautifully situated "health resort," so called, appeared to show the existence of many gross nuisances in the place, and other serious defects in its sanitary administration. We accepted Mr. Radcliffe's statements without hesitation, knowing of old the carefulness and trustworthiness of the medical inspectors of the Local Government Board; but it would now appear that his statements are contradicted by the Local Board of the town.

The reply of the Local Board of Sidmouth to Mr. Radcliffe's report is a lengthy document, and it has been prepared in answer to a request of the Local Government Board. It would seem that when Mr. Radcliffe's report was first considered by the Sidmouth Local Board, that board passed a resolution to the effect that "it was misleading and exaggerated, blaming the board for matters over which they had no control, discrediting what they had done, and making positive misstatements as to the board's sanctions and doings." His conclusions also were characterised as "crude and hasty." Upon the receipt of this resolution the Local Government Board called for a particular statement of the parts of the report referred to in this sweeping condemnation. The Local Board, thereupon, prepared a reply, which now lies before us, and upon the evidence of which we are asked to correct our previous observations, injurious to the sanitary reputation of Sidmouth. The reply professes to deal with Mr. Radcliffe's report in detail, and the greater part concerns that gentleman personally. With this portion of the reply we have nothing to do. The reporter must fight his own battle with the Sidmouth authorities, but it will presently be seen that that authority has been curiously unwise in challenging him. We have to do with the question only so far as it touches matters which concern the general public who have an interest in the sanitary condition of our health-resorts. Happily for our purpose we have preserved the original report in view of the interesting investigation it suggests upon the condition of other so-called small "health-resorts." Now the matters for which the Local Board has been blamed, and over which they aver they have no control, are the state of vaccination in the town, the filthy condition of the bed of the river Sid, the conditions of nuisances on private premises, the inadequate water-supply, houses unfit for habitation, and the imperfect channeling of premises and paving of yards productive of nuisance. On referring to the report we do not find a single word attributing the slightest responsibility to the Local Board as to vaccination, but we do find specific statements, uncontradicted, of nuisance caused by Sidmouth in the bed of the river Sid. Of the other matters we find, on reference to the Public Health Act, 1875, and to the bye-laws which are in force in the town, that the Local Board have the most complete control over them if they elect to exercise their powers. Of matters discrediting the Local Board they refer to the abatement of nuisances, the state of the sewers of the place, and the keeping of animals. Here the Board's defence seems to us to confirm in the most absolute manner the accuracy of Mr. Radcliffe's statements. As regards positive misstatements, the Local Board refer to knowledge of the old sewers existing, the ventilation of the sewers, the regulation of slaughter-houses and of certain recently constructed privies. Here again the specific statements in the report are wholly untouched. The opinions which the Local Board of Sidmouth consider "crude and

hasty," and their reasons for this conclusion, have an especial interest to visitors. The report having suggested a cottage hospital for the isolation of infectious diseases, the Local Board objects, among other reasons, to such a provision being made, because "an unoccupied pest-house" would hasten the departure of visitors. The safety of visitors from its existence is not considered! Proper provision for disinfection, of a mortuary, for giving the medical officer of health certain information as to deaths, as to augmenting the water-supply, as to systematic inspection, and cleansing of certain kinds of nuisances—all are objected to by the Local Board on the ground that the recommendations are "crude and hasty." The report imputed nothing perverse in such neglect of sanitary administration as he found at Sidmouth. Persons contemplating a visit to that place for health purposes will be apt to ask, if the "reply" comes before them, whether in this respect Mr. Radcliffe has discharged fully and without favour, as the public have a right to ask from a gentleman in his official position, the important duties entrusted to him.

RAILWAY LITIGATION.

ANYTHING better calculated to demonstrate the best mode of "How not to do it" than our present system of assessing damages in cases of accidental injuries received on railways, it would be difficult to conceive. A man receives a concussion in a railway collision, and, in consequence, the nutrition of his nerve-centres becomes disarranged, and he is more or less unfitted for the business of life. The injury from which the patient is suffering is usually of a very occult nature, and such as can be rightly estimated only by those who have been very specially trained in the observation of nervous disorders, and by the aid of delicate instruments which few even within the pale of the profession are thoroughly qualified to use. The lesions which exist in such cases, although definite enough, are generally extremely limited in area, and the symptoms can only be estimated by examining the patient with great calmness and in a deliberate and judicial spirit.

What actually occurs in such cases as these is a disgrace to our judicial system, and is so unfair in its action upon plaintiffs, defendants, and those who are compelled to give professional evidence, that an alteration of the law must be considered as a proved necessity.

Directly after the receipt of an injury the plaintiff has, added to his physical suffering, all the mental worry attendant upon a pending lawsuit, with the probability that, in presenting his claims, he may be ruined in pocket. Then follow the personal examinations by medical men, who, with the most honest intentions, must be occasionally biased in favour of the side by which they are employed. The unhappy patient is sometimes subjected to an examination by six or seven doctors at a time; and, presuming that he is suffering from the effects of nervous shock, it is next to impossible that any just estimate of his real condition can be arrived at by such a process. Perhaps he is tempted (ruin from a lost lawsuit staring him in the face) to make the most of his symptoms, and, if he be detected, then the defendant's doctors refuse to credit the genuineness of any of his complaints. Perhaps the examination so stimulates his nervous system that the lurking weakness is not apparent at such a time, or, possibly, he may be completely unnerved, and, being worse at this than at previous or subsequent periods, may unjustly earn the character of a malingerer.

The examination finished, the case comes into court, and we have the edifying spectacle of a patch of spinal sclerosis, or softening, or hæmorrhage, possibly no bigger than a pea, argued about by counsel whose knowledge of nerve pathology is exactly equal to that which would be picked up by a parrot in a medical school, and before a jury more ignorant than the counsel, and a judge who takes a strictly legal view of the nerve centres. Before such a tribunal the only chance for either side is to make very positive assertions, with a view of influencing the jury; for since juries not unfrequently decide these matters for themselves (irrespective of the directions of judges or counsel, whose ignorance of the whole subject is generally apparent even to "the twelve intelligent gentlemen in the box"), it is highly important to be very thorough in one's opinions, and to send the jury to their deliberations with some plausible dogma still ringing in their ears.

Why should not the assessing of damages for accidental injuries, or, at least, the preliminary determination as to the condition of the patient, be settled in the same manner as the question of insanity? A schedule of questions to be answered; an independent examination by medical men having no connexion with either party; and a final reference to a court of commissioners especially competent to deal with the question in all its aspects, would surely be a more satisfactory mode of settling these claims for damages than the reckless expenditure of money on either side in attempting to compass an opponent, not by a careful search after the truth, but by the mere numerical force of costly witnesses.

LOCAL (HEALTH) GOVERNMENT WISDOM.

THE Local Board of Accrington has recently elected a medical officer of health. There were two candidates, one who had held the appointment at a salary of £100, but whose period of appointment had expired; and another who proposed to do the work for £80. When will medical men learn to stand shoulder to shoulder? The late incumbent of the post had confessedly done his work well, and it was not suggested by the Local Board that he had not earned his salary. But, alas! twenty pounds sterling is a consideration to a board which dare not face its constituents to add sixpence to a rate to expedite sanitary progress. Accrington has a three-shilling rate it would appear, and one of the speakers at the meeting observed, "He would like to see the man who would dare to propose a three-shillings-and-sixpenny rate." Economy carried the day, and Mr. Ewart was elected medical officer of health by a majority of 13 to 3.

In the course of the discussion on the appointment some suggestive things were said by members of the Local Board as to the mode of performance of the duties of a medical officer of health. First, it was said he was too apt to forget in his advice the limited resources of the local authority; next, that the duties of a medical officer were best discharged, not by writing "blazing" reports, but by his attending the nuisance committee, and advising them; and, lastly, that there was too much of "You have neglected to do this, and you have neglected to do the other." They would all, added the speaker of these kindly hints, "Be in Paradise if they could get there." It is just as well that we should be reminded from time to time that the road to the sanitary paradise is quite as straight and narrow as the road to the celestial.

FOOTBALL ACCIDENTS.

REPORTS of serious football accidents have reached us from South Devon, whilst sundry minor casualties are reported showing that, in that district at least, the "rigor of the game" is still insisted on. The first series of accidents occurred at Newton, in a match between the college of that town and Teignmouth, where one of the players of the college received such a severe injury to his leg that he was obliged to be carried off the ground. Then one of the Teignmouth men had his shoulder dislocated; another was so

severely "backed" that he was seen limping for a long time after, whilst one of the college team walked home with his eye much swollen and discoloured. At Paignton a collision occurred in which one of the players was so injured that he had to be removed in an unconscious state to a neighbouring hotel, and during the evening grave fears were entertained as to his ultimate recovery. When able to be moved, it was considered safer to convey him home by boat than by rail. The week following, Paignton was again the scene of a violent encounter, in which the Paignton men suffered severely from the onslaught of their opponents, two of their men meeting with serious injuries, whilst other of the players met with minor casualties. Such is the chapter of accidents reported from a district of limited area and within an extremely short space of time; and when to this are added reports of a similar character from other parts of the kingdom, and which have appeared in our columns, evidence is accumulating of an overwhelming character to prove the brutality of the game, and its highly dangerous character, when played by adults, who, having lost the elasticity of boyhood, fall "badly," and consequently are liable to receive severe injuries. We again protest that this noble game ought to be rescued from the degraded condition into which it has fallen, and to be made really a game of skill, and not a mere exhibition of wrestling and bear-fighting, in which brute force and superior strength are invariably the victors.

THE ASTLEY COOPER PRIZE.

SINCE the discussion that took place in our columns regarding the award of the Astley Cooper prize, the trustees have laid the case before the Solicitor-General, and in consequence of his decision that the successful essay must be the production of one author, they have felt bound to declare the next essay in merit to be entitled to the prize. This essay bears the motto, "Sympatheticus," and the sealed envelope accompanying it contained the name of George Arthur Woods, Southport, Lancashire. To this competitor, therefore, the prize will be awarded. With reference to their first decision the trustees were unprepared to find that the essay which they selected as first in merit was the production of two authors; but, looking to the words of the bequest, that funds were provided "for a prize to be called the Astley Cooper Prize for the best original essay or treatise," &c., and to the stress laid upon original research as a basis of award, the trustees interpreted the design of the prize as directed rather to the promotion of science than the individual interests of the competitors, and felt that they would be best fulfilling the intentions of the testator by awarding the prize to the best essay, notwithstanding it was found to be the production of two authors.

ENTERIC FEVER IN THE FRENCH ARMY.

AN effort has been made to prove that the prevalence of enteric fever in the French army is not due to any special cause affecting soldiers alone. Dr. Léon Colin read a paper on this subject before the Academy of Medicine. He maintained that in many cases the epidemics originated outside the barracks; but when once introduced among the soldiers, the disease spread with great rapidity, as the age for military service is precisely the age when most persons are particularly likely to contract this fever. There are a greater number of young soldiers in the ranks now than on any previous occasion. A large proportion also are recruited from the rural districts, and these latter are especially susceptible to enteric fever when ordered to garrison a large overcrowded town. But Dr. Colin maintains that the rate of mortality would be equally great if these young men lived as civilians in the same locality. In other words, the health of the soldiers is not worse than that of the members of the civil population who are of the same age, and therefore equally susceptible to the disease. We must object, however, that this form of argument, though doubtless very satisfactory to the French authorities, is scarcely what we should expect at the hands of sanitary reformers. The army is under strict discipline, and there would be no difficulty in enforcing well-known and indispensable sanitary measures. Among the civil population this cannot be done with the same facility. The health of the army should be superior, instead of equal or inferior, to that of the ordinary population; but the carelessness of the French in the matter of drains is notorious, and the same absence of cleanliness is noticeable in barracks as in private houses. The fact that epidemics have been stopped by ordering regiments to camp out under canvas proves that they were due to unwholesome barracks and their surroundings. Under such circumstances, and as the rate of mortality from enteric fever among the soldiers is still increasing, this is scarcely the moment to choose for self-congratulation; and we trust Dr. Colin's discourse before the Academy will not induce the Government to rest satisfied with the little that has been done to protect the health of the French army.

FAMINE IN INDIA.

SIR ARTHUR COTTON and Mr. Bright are only stating in platform language a perfectly well known fact when they assert that the occurrence of famines in India is directly due to the insufficiency of the provision for storing and distributing water over a naturally fertile but easily parched soil. It has long been apparent to those who know India, and have studied its economic conditions and resources, that, except for military purposes, a vast system of railways cannot be productive, and will practically have little or no effect in the prevention of famines. The policy should be to render each district of the country, with its scattered populations, independent of external help. This can be readily accomplished, and, as Sir Arthur Cotton showed at Manchester, on the 11th inst., with a fair financial recompense for the use of capital invested, by making grants for water-tanks and aqueducts instead of railways. It seems strange that a policy so obviously wise and statesmanlike should need to be enforced on the Home Government, after the teachings of experience, which have been equally appalling and significant.

RELATIONS OF THE ADRENALS TO CERTAIN OCCASIONAL STRUCTURES IN THE OVARIES.

DR. CHARLES CREIGHTON, of the University of Cambridge, in a communication to the Royal Society, read a few nights ago, endeavours to prove that there exists an essential resemblance between the constituent parts of the suprarenal bodies of mammals and certain structures in the mammalian ovary that are of occasional, but of normal occurrence. The appearances are best seen in the adrenals of the dog and horse, and in the ovaries of the bitch. The author limits the term "cortex" in the adrenals to the outer zone of follicles, and the term "medulla" to the general mass or parenchyma of the organ. The structures in the ovary to which the cortical follicles are compared, are the remains of Graafian follicles, within which the ovum, after reaching a degree of ripeness, has shrivelled up and disappeared. They are simply obsolete Graafian follicles. The cortical adrenal structures are described as elongated closed cylinders, straight or tortuous, and lined with columnar cells, which extend across the centre or axis of the tube to the opposite side. Exactly similar structures arise in the Graafian follicles by the enlargement of the cells of the membrana

granulosa when the ovum has failed to undergo its normal process of development. The conclusion is that the cortical structures of the Adrenals are the obsolete condition of follicles that in their active period resembled the existing Graafian follicles, and this conclusion is in accordance with the hypothesis that the adrenal as a whole is an obsolete organ. In the second section of the paper the author describes the resemblance of the general intra-cortical mass of the adrenals to another class of ovarian structures—viz., the corpora lutea. Both structures are cellular throughout, and the individual cells are the same. The cells are polyhedric with coarsely granular protoplasm and central nucleus, the protoplasm being occasionally replaced by a vacuole. In both the cells are set in a firm meshwork of fibres, connected with the walls of the capillaries, and in both there is the same radial arrangement of bloodvessels.

THE HEALTH OF THE POPE.

OUR correspondent at Rome writes:—Notwithstanding the optimist representations which the *Osservatore Romano* and the *Voce della Verità* have been instructed to put forth with regard to the health of the Pontiff, it is manifest that his strength is slowly and steadily declining. The epileptoid seizures to which the Pope has throughout life been subjected have left his circulation languid and prone to that passive serous effusion which has deprived him of the use of his lower limbs. An increasing sensitiveness to barometric pressure is also apparent in the general aggravation of the symptoms consequent on such continuous wet weather as has prevailed in Rome these last ten days. Hence, too, the alleviation that has followed on the return of a clearer atmosphere. To-day (the 10th inst.) there is no change for the worse, and the senile catarrh, which formed so alarming a symptom some days ago, is less severe, and provokes fewer of those paroxysms of coughing from which, in the patient's tendency to epileptoid seizures, so much is to be dreaded. Simultaneously, too, the appetite is slightly keener, and a better night's rest is looked for. But the condition, as a whole, is not such as to warrant a relaxation of the vigilance of Drs. Ceccarelli and Antonini in their efforts to obviate the tendency to death by asphyxia or coma. Of fatal syncope his physicians have less apprehension—the "fainting fits," which the lay press from time to time records, being simply epileptoid in their cause, their character, and their consequences.

MUZZLING DOGS.

THE usual order, to the effect that all dogs not under proper control shall be muzzled, has been issued. This is a very perfunctory measure and, looking to the manner in which it is almost certain to be carried out, either useless or cruel, not improbably *both* in the same instances. Nothing is more maddening to a thoroughly domesticated and free-tempered animal like the dog than to find his mouth encased in an apparatus which impedes the movements of his jaw. Moreover, there is this serious disadvantage connected with the muzzle, and it applies with nearly equal force to all forms of the instrument, that it limits the outflow, perhaps also the secretion, of saliva, while the free play of air within and around the mouth-cavity is, to a considerable extent, prevented. It would be more merciful to carry out the scheme proposed by Mr. Youatt, and recommended by Sir Thomas Watson—namely, to place all dogs in quarantine for a time—than to allow them only the sort of liberty compatible with the permission to wander about muzzled. If boys and men would abandon the practice of harrying poor curs in the public thoroughfares, and the dogs taken to the Home were sold or destroyed, instead of being kept to be claimed by their owners, animals worth preserving would be better cared for, and those not deemed worthy of such pains might be put out of existence, to their own relief and the advantage of the public.

"THE WORLD" ON DOCTORS.

A GENEROUS and spirited paper, entitled "'Doing' the Doctors," which appears in *The World* of the 5th inst., concludes with the passage we quote below. It is rare to find so just and accurate a picture of the vexations that embitter the lives, and the struggles that ceaselessly tax the tempers and strength, of practitioners, as this article presents to the reading lay public:—

"Of such inestimable value are the services rendered to society by the medical profession—and especially by its leaders, who have mastered its deepest secrets, who hold in their hands the mighty power of alleviating human suffering, upon whose wisdom and judgment hang often the issues of life and death—that they are fairly entitled to receive from the verdict of public opinion the remedy they are so loth to claim for themselves. Nor must it be forgotten with what industrious and praiseworthy effort all such have fought their way up to the topmost rungs: the years of patient persevering study and concentrated thought; the long struggle with adversity before fame came with full hands; the constant warfare with contagious deadly disease, in which are imperilled not only their own valuable lives, but those of their dear ones at home. More than one, whose name is familiar on every tongue, has seen his family decimated thus, or has been brought to death's door himself again and again, by the fell enemy he has made it his proud 'specialty' to combat, recovering slowly to find, perhaps, that in his enforced absence others have nearly outstripped him in the race, and he has to begin the world anew. It is not such men as these—the] good genii, neither more nor less, of the human race—who should be subjected to the losses and humiliations we have described. Their life is one long round of continual harassing anxieties, of perpetual discomfort, of infinite toil. They take their meals by snatches, standing, or in their carriages as they are whirled to and fro; their rest is constantly broken; they can never call a single hour wholly and entirely their own. Self-sacrificing, indefatigable, uncomplaining—so great and good is the work they do that they deserve a reward, unstinting, cheerfully rendered; not grudgingly, sparingly, tardily, or not at all. A doctor's fee is essentially a debt of honour; yet more, it is a debt of gratitude, and it should be guaranteed with all the assurances of a solemn and irrefragable bond."

FRACTURE OF THE FŒTAL SKULL BY THE FORCEPS.

THE *Journal de Médecine et de Chirurgie Pratiques* records a case of considerable interest. It occurred in the wards of M. Millard in Paris. A rachitic woman had been in labour two days. Expulsive pains recurred at long intervals and were feeble in character. A midwife had ruptured the membranes twenty hours previously. The head was at the brim, which measured 3½ inches in the antero-posterior diameter. Forceps was applied, and after some minutes' traction the operator had a sensation of something giving way. At the same time the head became disengaged. It was, however, soon born, but apparently dead. It was plunged into a bath, and inspiratory efforts soon began. Its cry was scarcely perceptible. The left eyeball was pushed forwards and the conjunctiva infiltrated with blood; the right half of the face was paralysed; the arm and leg on that side were slightly convulsed. The end of the blade of the forceps pressed unduly on the fronto-parietal eminence. The bone was hard, and had yielded at that spot. It was a comminuted fracture, and not a simple depression. A cephalæmatoma formed at the spot. The pericranium was incised, and the bones raised to their normal level. All the symptoms soon ceased, and the child made an excellent recovery.

IODOFORM IN THE TREATMENT OF ORCHITIS.

DR. JULIAN ALVAREZ, in an article contributed to the Spanish journal, *La Independencia Medica*, for June 1st, 1877, gives several cases in which he has tried this remedy. He says that iodoform alleviates the pain in blennorrhagic orchitis by reason of its anæsthetic properties in this respect, its action being superior to belladonna, cicutine, opium, or other alkaloids; that this remedy, in consequence of its richness in iodine, exerts its antiphlogistic and resolvent action without any inconvenience to the patient, which is in striking contrast with the action of mercury. Iodoform, moreover, materially shortens the duration of blennorrhagic orchitis, whilst it avoids the danger of consecutive induration of the testis. The ointment that ought to be employed should contain one to two parts of iodoform to thirty of the excipient, according to the intensity of the inflammation. Dr. Alvarez states that in none of the cases in which he employed this remedy did he observe any eruption of the skin, so common when other ointments are used.

A CONVALESCENT HOME FOR WOMEN.

MEDICAL practitioners and benevolent persons are often anxious to know of a Convalescent Home in the neighbourhood of London, to which to send a patient at a small expense. Our attention has kindly been directed to Lady Jane Bourchier's Home, Hope Cottage, Hampton Court-road, about fifteen minutes from Hampton Court station. Here female convalescents are received, excepting those suffering from infectious disease. Five shillings a week is charged, or seven-and-sixpence if the money is paid by a benevolent friend. A certificate from a doctor as to the nature of the illness and the state of the patient is required. Lady Bourchier gives stimulants, but only when ordered by the medical man.

FAMINE IN RUSSIA.

IT would appear that Russia has to contend with famine within its own borders as well as with the Turks in Bulgaria and in Armenia. Dearth is reported to prevail to a serious extent in the province of Kazan in Eastern Russia—the province lying to the north-west of and adjacent to the province of Samara, which suffered so disastrously from famine a short time ago. The city of Kazan is said to be crowded with famine-stricken persons who have flocked into it in search of food, and the peasantry in the outlying districts are reduced to great straits. An Imperial Commission has been appointed to visit the province and organise the means of relief. A public subscription has, moreover, been opened, to which the Tartar merchants have subscribed liberally.

THE GENERAL MEDICAL COUNCIL.

DR. PYLE has been re-elected for five years to represent the University of Durham in the General Medical Council. Dr. J. Bell Pettigrew, F.R.S., Dean of the Medical Faculty, and Professor of Medicine and Anatomy in the University of St. Andrews, has been elected by the University of Glasgow and St. Andrews as their representative in the Council, in place of Dr. Allen Thomson.

THE CLINICAL SOCIETY.

THE following notice for the meeting this (Friday) evening, December 14th, was inadvertently omitted last week:—Dr. Broadbent: A case of Convulsions, treated by Venesection. Mr. Maunder: Two cases of true Subcutaneous Treatment of Exostosis (the patients will be exhibited). Mr. Barwell: Cases showing the results of Excision of the Ankle; of operation for Rickety-bent Shins; of operation for Bowed Legs (the patients will be exhibited).

THE number of deaths registered in London last week was 1547, representing an annual mortality-rate of 22·8 per 1000—a slight decline on that of the previous week. The fatality attributed to the seven principal zymotic diseases was also lower than it had been of late, 234 deaths being referred to them, against 258 and 248 in the two preceding weeks respectively. The 234 deaths included 25 from small-pox, 76 from measles, 46 from scarlet fever, 5 from diphtheria, 36 from whooping-cough, 27 from different forms of fever, and 19 from diarrhœa. Of the 25 small-pox cases, 16 occurred in private dwellings; 6 were certified as vaccinated, 6 as unvaccinated, and in 13 cases the medical certificates gave no information as to vaccination. The deaths from diseases of the respiratory organs were less fatal last week than in the two previous weeks, being 397 in number, against 407 and 409 respectively.

AT the last meeting of the Manchester Literary and Philosophical Society—Dr. Angus Smith in the chair,—Mr. W. Thomson, F.R.S., read a paper "On the construction of a room or series of rooms, free from germ life, proposed for use in the performance of surgical operations." The process recommended was that of filtering from the ordinary air, through layers of cotton wool, the innumerable spores that are found floating in it. Mr. Thomson said that the results of his experiments showed conclusively that large rooms might be constructed and ventilated with filtered air by means of fans, so that flour paste, taken as a test standard, would remain in them free from fungus life. The lecture was an instructive one, and especially interesting in the bearing of its subject matter on antiseptic surgery. Its publication and circulation in the form of a pamphlet would be fully warranted.

WE read with satisfaction the report, by Mr. W. Tresidder, the secretary, presented at the annual meeting of the Surgical Aid Society, at Cannon-street Hotel. The report showed an increase of subscriptions and legacies. This is a Society worthy of still larger support than it has had. Surgical appliances are dear, and very inaccessible except to the well-to-do. This Society brings them within reach of the poor and the lame. Every medical man has frequent reason to wish that he could put a poor patient in the way of getting a truss, or a mechanical support, for a weak spine, or for a rickety leg, as the case may be. We do not know any society which has stronger claims, or does better work, than this.

AT a special meeting of the governors of the South Devon and East Cornwall Hospital on the 3rd inst., it was decided to erect a new hospital on a different site. We pointed out some months ago that this would be a far wiser proceeding than expending a large sum of money in patching up the present inconvenient and inefficient building, and after the condemnation of its construction and site by Mr. Square, no other course could have been adopted.

THE question has been revived in the *Globe* of the relationship of the outbreak of fever at Croydon in 1875 to the sewage irrigation carried out by the local authority in the Beddington meadows. It must have been overlooked at the moment that this question was definitively settled by Dr. Buchanan in his official investigation into the causes of this outbreak, and that the sewage farm had no part in them.

WE may remind our readers that at the meeting of the Pathological Society on Tuesday next a communication will be made by Prof. Lister on "Lactic Fermentation in its bearings upon Pathology."

THERE has been for several weeks a rumour afloat of the serious prevalence of scarlet fever at Surbiton. At a meeting of the Improvement Commissioners—the sanitary authority—of that place, held on the 10th inst., the medical officer of health (Dr. Owen Coleman) reported that only two deaths from scarlet fever had been registered in the last eighteen months within the Improvement Commissioners' district, and that during the last three months there had been less scarlet fever in the district than during the earlier months of the year. He added that hardly a case of scarlet fever existed under treatment at that moment.

THE Medical Microscopical Society, which has existed for about five years, is threatened with extinction. Although its roll of members is by no means small, yet the meetings have been so ill-attended that it is not thought desirable to continue to hold them. Accordingly a special general meeting is to be held on the 21st inst. to take into consideration the following resolution, proposed by Mr. Golding-Bird, and seconded by Mr. F. H. Ward—namely, "That, considering the small number of attendances at the meetings, it is expedient that the Society should be dissolved."

IN view of the increased accommodation for lunatics required in certain divisions of Lancashire, and the very heavy charges upon the rating caused by the prevalence of intemperance, it is contemplated shortly to memorialise the Home Secretary, praying that a measure be introduced into Parliament placing the sale of liquor under the control of the ratepayers, and providing especially for the closing of public-houses on Sunday.

THE medical officer of health for Whitechapel, Mr. John Liddle, has just issued his quarterly report of the sanitary condition of the district under his charge. There is nothing especially noteworthy in the report. A somewhat high rate of infantile mortality prevailed during the period embraced, mainly attributable, we should imagine, to overcrowding and dietetic errors. Mr. Liddle strongly advocates the compulsory registration of infectious disease.

AMONG the passengers in the train which met with the accident between Clapham Junction and Vauxhall on Saturday evening last was Dr. C. D. F. Phillips, of Grosvenor-square. We are sorry to learn that he has sustained the following injuries:—Fracture of two ribs, severe strain of the back and neck, and general bruising. The latest report is that the effects of the concussion are passing off.

THE parish of New Monkland, described as "one of the healthiest districts in Scotland," has been visited by a virulent and fatal epidemic of scarlet fever. One inhabitant in the space of four days lost the whole of his family of five children, ranging in age from seven months to eight years. There are great complaints of the quality and insufficiency of the water-supply of the locality.

A VERY excellent suggestion has been made by the Chelsea Board of Guardians—namely, the establishment of a seaside convalescent institution for poor persons suffering from illness likely to be benefited by sea air. The Chelsea Board are soliciting the co-operation of other guardians in urging on the Local Government Board the desirability of making such a provision.

THE *Army and Navy Gazette* states that the principal medical officer of the Chatham district, Deputy Surgeon-General G. Auchinleck, M.D., is expected to leave for service in the Bombay Presidency.

A SEVERE epidemic of scarlet fever has broken out at Hampton Lucy, the disease having been imported thither from Birmingham. Energetic and comprehensive measures have been taken by the sanitary authority to stamp out the malady.

IT has been discovered that the drains of some of the new buildings on the Holborn-viaduct have no communication whatever with the main sewers. Action will be taken at once by the Commissioners of Sewers for remedying the defect.

INFECTIOUS disease is rife in Whitehaven. The medical officer to the guardians for the town has been ordered to prepare a special report on the visitation.

EDINBURGH has for some time enjoyed a high degree of salubrity. During the past quarter the death-rate was only 17·24 per 1000 annually.

MEDICAL ASPECTS OF THE WAR.

THE weather appears to be keeping as open on the river Danube and in Bulgaria as it is in Western Europe. There has been no continuous severe cold, and low-lying lands and the banks of the stream present the characters that distinguish them in autumn rather than in winter. Malarious fevers and dysentery constitute the bulk of the sickness in both the Russian and the Turkish forces in Bulgaria. True typhus is present, however, in the belligerent armies, and the first severe tax upon the physical powers of the soldiers may kindle the disease to a devouring flame. Plevna has fallen, and it is not unlikely that the capture of the garrison may prove more fatal to the Russians than all the shot and shell hurled from the beleaguered town. It is probable that typhus exists in a malignant form among the captured troops, and, if this be the case, it may be anticipated that the disease, in this form, may be introduced among the Russian troops and be spread among the civil populations of Roumania and Russia in the tract of the prisoners as they are transported to the interior. The Russians, however, have the terrible experience of the Crimean war to guide them in this matter, when typhus was spread by the garrison of Sebastopol, after the fall of that city, into the interior of the empire.

The principal building of the Dorpat Ambulance at Sistovo has been burned to the ground. It contained at the time when the fire broke out twelve seriously wounded soldiers, and it was with the utmost difficulty that the medico-sanitary staff of the ambulance was able to save the patients. This, however, was happily effected at great risk. The rapid extension of the flames rendered futile any attempt to remove valuable stores in the building after the patients had been removed. The loss of surgical instruments and appliances has been serious. The ambulance was installed in a Turkish house, and the imperfect construction of a stove, it is said, led to the disaster.

On the 29th November the Empress's sanitary train, No. 1, returning empty to Yassy from St. Petersburg, ran off the rails on the Kiew-Brest line. Two of the waggons were damaged, but none of the staff of the train injured.

Dr. Laseron, of Tottenham, arrived at Bogot on the 26th November, with seven English sisters of charity, to aid in attending the wounded.

Among the recent promotions for distinguished services in the Russian army are included Dr. Muikéviteh, surgeon-in-chief of the Medical Department of the Caucasus, and Dr. Odnosoumow, assistant-inspector of the sanitary service of the Caucasus.

The Cronstadt correspondent of the *Globe* reports that the Russian naval brigade on the Danube is being decimated by epidemic diseases. Last week, he states, 100 invalids, suffering from fever and dysentery, arrived at Cronstadt from Bulgaria, and orders were issued the same day by the naval authority to prepare for the reception o further numbers.

THE UNIVERSITY OF LONDON.

AT the meeting of the Senate of the University of London on Dec. 7th, the chairman of Convocation presented the following resolution passed at the meeting of the Annual Committee of Convocation, held Nov. 16th:—"That the annual committee request the chairman of Convocation to convey their thanks to the Senate for their courtesy in receiving the deputation, and for acceding to the request of Convocation by abandoning their proposed action under the Russell Gurney Act, and by submitting the intended important change in the constitution of the University to the judgment of Convocation by a new charter, which will apply to all the faculties." It was then resolved by the Senate: "That the Senate receive with pleasure the expression of opinion of the Annual Committees, conveyed to them by the chairman of Convocation, that the objects desired in common by the Senate and by Convocation may be obtained in a manner to which neither party objects by a new supplemental charter in place of the existing one for the admission of women to all degrees, with the requisite limitation in regard to the admission of women to Convocation; but at the same time feel it necessary to point out that they have not taken any resolution as to their future course."

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

AT an ordinary meeting of the Council, held on Thursday last, all the members of the Board of Examiners were re-elected except Mr. Birkett, who retired, Mr. Wagstaffe being elected in his place. Mr. Simon's motion to rescind the rule that all Examiners in Anatomy and Physiology shall be Fellows of the College, was rejected by an overwhelming majority. A Bill for placing all dentists on a separate register, irrespective of any qualification except that of having been engaged in the practice of dentistry for a certain period, was, after much discussion, approved. An explanatory letter was read from the secretary of the Faculty of the Bristol Medical School, but the Council decided to do nothing more at present than to express a hope that their recent recommendations would be carried out.

MR. SPENCER WELLS AND THE SAMARITAN HOSPITAL.

ON Wednesday last Mr. Spencer Wells performed ovariotomy for the 404th time at the Samaritan Hospital. After the operation, he remarked that it was twenty years since he first joined the institution, which was then a dispensary. His first ovariotomy in connexion with the institution was done about twenty years ago, and fortunately the first three cases recovered. Had they proved fatal the history of ovariotomy would probably have been different, and the operation might have remained under a cloud. The mortality in each quinquennial period had steadily diminished; it being one in three during the first five years, one in four in the next five, and one in five in the third five years. Still more recently it had been only one in ten. The total number of deaths among the 404 cases was 99. Other operations than ovariotomy had been done in the hospital; for example, amputation at the hip joint, removal of the lower jaw, and operations for vesico-vaginal fistulæ and ruptured perineum, and these showed that better results were obtained when the same care was bestowed upon them as upon the ovarian cases. The hospital was not perfect, but practically it afforded very good results. Mr. Wells then mentioned that he was now retiring from the active work of the hospital, having been elected consulting surgeon, and that this was probably the last operation he should perform there, unless he operated again next week. But it had been arranged that public consultations should be held at the hospital every Friday; due care being taken to respect the feelings of the patients.

Mr. Wells's connexion with the hospital, for whose reputation he has achieved so much while establishing his own unrivaled position, will not be entirely severed, for it will still enjoy the great advantage of his unequalled experience, calm ripe judgment, and valuable counsel. But the loss the institution has sustained in losing him as an operator is severe, and probably irreparable; for not only is it unlikely that any one with equal ability will enjoy his unique opportunities, but it will be long before qualifications and endowments for this special work, such as characterise Mr. Wells, will be found again united in one person. We believe that in public and in private Mr. Wells has operated about 900 times, but there are now so many and competent operators in the field that cases will be more widely distributed than heretofore; fewer, probably, falling to the lot of any one man in a like space of time. Mr. Wells's teaching and example will largely influence his disciples, who are to be found not alone in this country, but in every quarter of the globe. Nothing, we feel sure, would more gratify him than that the noble work he has been so instrumental in placing on a sound and permanent basis should be carried on and developed to the utmost attainable perfection. Few men have had the privilege of contributing so largely and directly to the relief and welfare of their suffering fellow-creatures as Mr. Wells, and probably fewer still could with more justifiable pride say, if called upon to justify the labours of their life, "Si monumentum quæris, circumspice!"

Correspondence.

"Audi alteram partem."

ANTISEPTIC SURGERY.

To the Editor of THE LANCET.

SIR,—In company with all other hospital surgeons, I am profoundly interested in the question of the real value of antiseptic surgery, as carried out by Mr. Lister, and, like many other hospital surgeons with whom I am acquainted, I have not as yet met with what I should consider convincing evidence on the point. I do not deny that the method of dressing is an admirable one. We hear of many daring operative procedures being attempted under its protection, and with some degree, at any rate, of success; but what we have not yet seen is any definite evidence that the antiseptic method gives results of a different kind and nature from those which other methods of dressing would give if applied with equal care and skill. Such evidence can hardly be furnished by the success of exceptional operations such as those I have above referred to, but the recent removal of Mr. Lister to King's College Hospital seems to give us the opportunity for a comparison to which, as far as I see, no objection can be taken, if I am right in believing that Mr. Lister and Mr. Wood have about an equal number of patients, and that number is sufficient to afford a fair surgical experience in the course of a limited time. Mr. Wood is understood hitherto not to have practised the antiseptic treatment—at least systematically,—so that his patients would suffer no injury if he were to agree to adopt for the time any form or forms of dressing he might prefer, provided that the dressing was based only on the ordinary principles of cleanliness, drainage, support, &c., which are recognised as common to all good forms of dressing. Nothing then would be required but careful registration, and full publication year by year of the experience of Mr. Lister and Mr. Wood, on a scheme, which they could most easily devise, showing, I presume, amongst other particulars, the number of cases of so-called hospital disease originating in the wards, the deaths and the causes of death in cases of accident and operation, and the relative period of recovery in selected classes of cases. We in London have often been twitted by our Scotch brethren with slowness in adopting Mr. Lister's theory and practice in their entirety, and have hitherto been content to reply that (as far as we are able to judge) our practice, following the rules of surgery which we have been taught by precept and experience, has been fairly successful, and that if the antiseptic method gives results mate-

rially different, they ought to be demonstrated, not by attempting operations for which the indications are dubious, and which, therefore, cannot be expected to become common, but by showing that hospitals are decidedly healthier and cures decidedly more rapid and more certain in ordinary cases. Some difficulty seems to have stood in the way of affording such evidence in Edinburgh. There ought to be no such difficulty in London, and the beginning of a new year affords a favourable opportunity for commencing the comparison. I hope the importance of the subject, and my own anxiety to do my duty in connexion with it, may relieve me of any charge of presumption in making the suggestion. I am, Sir, yours, &c.,

Great Cumberland-place, Dec. 11th, 1877. T. HOLMES.

THE MEDICAL ASPECTS OF TOTAL ABSTINENCE.

To the Editor of THE LANCET.

SIR,—It is much to be regretted that Mr. Brudenell Carter's attempts to become a total abstainer have ended in failure. The advocacy of his pen, to say nothing of the force of his personal example, is a loss to the cause of temperance.

One may, however, be allowed to discount the loss. For, after all, his letter goes to prove nothing more than that he, as an individual, is unable to accomplish his work without the assistance of "very weak whisky-and-water—the genuine article—well matured by keeping." For the purpose of illustration in this matter, one man is as good as another. For four years I have succeeded in doing my work, not only without detriment to myself, but with improved health, unaided by any alcoholic stimulant. My work is no trifle, covering, as it does, that of a busy general practitioner, together with the cares and anxieties of hospital work. Like most men in such a position, I have to combine as best I can in my work all the "specialisms" of the day. I may, then, set my case against Mr. Brudenell Carter's, and, so far, we may cry quits! But when we come to discuss the broader question as to whether total abstinence from alcohol, or moderate drinking, is best for the community at large, we launch out on a discussion to which neither the personal experience of Mr. Brudenell Carter nor my own can contribute much. Let us first eliminate from the community certain classes. The habitual drunkards, Mr. Brudenell Carter will, no doubt, admit, must be treated by total abstinence. Next, the vast multitude of total abstainers who, like myself, have become so for example sake. Then the smaller number of persons, who, for one disease or another, have been obliged to renounce stimulants. Of the residue it is impossible to say how many can live and work without stimulants, because they have never tried the experiment. Judging from what one knows, one would think that a very vast number would not only succeed, if they tried, but would in every way be better off. So, too, some eminent members of our profession seem to think. Dr. Brunton, before the Lord's Committee, is reported to have said, "If a man eats well and sleeps well he does not require alcohol, and he is better without it." Dr. Burdon-Sanderson said, "My belief is that, upon the whole, the human race would be situated just as favourably if the use of alcohol did not exist." Sir William Gull said, "I should like to say that a very large number of people in society are dying day by day poisoned by alcohol, but not supposed to be poisoned by it."

I agree with Mr. Brudenell Carter that we have plenty of *facts* to go upon without pinning our faith to the result of laboratory work, or the fallacies of chemists. We know as a fact that, supposing alcohol were to-morrow eliminated from all dietetic purposes, and restricted only to medicinal uses, we *might* inflict a minute evil on a very small minority, but that the vast majority of the people would be immensely benefited; nay, more, that thousands of lives would be saved, many crimes avoided, and pauperism diminished. As individual members of a profession, whose great aim ever has been to help in effecting these objects, I think it is our bounden duty to do all we can to diminish intemperance. If, then, with a wise discrimination, we can induce people to become total abstainers, we not only place them in a position of safety, but we provide in each one so abstaining a point from which temperance principles radiate; for I hold that one wise total abstainer is worth any number of platform speeches or temperance sermons. In my humble opinion Mr. Brudenell Carter has taken up his pen too soon. We are not yet, either as a profession, or a nation, so far gone in total abstinence as to need a crusade against it.

I am Sir, your obedient servant,

WILLIAM PAUL SWAIN, F.R.C.S.

Devonport, November, 1877.

ON THE USE OF THE SUBCUTANEOUS SAW IN OPERATIONS FOR CLOSURE OF THE HARD PALATE.

To the Editor of THE LANCET.

SIR,—In your issue of September 22nd, 1877, I notice the report of a case of cleft through the hard and soft palate, for the relief of which Mr. Henry Smith, at the King's College Hospital, employed the plan of operation suggested by the late Sir William Fergusson, by which method the cleft in the hard palate is closed by segments of bone detached by the chisel from the sides of the palate, drawn to the median line, and secured in position by suture.

In the report the statement is made that occasionally some necrosis of the bone has occurred at the point of division, and that failure has followed this method of operation in consequence of severe hæmorrhage.

Having encountered both of these unfavourable conditions in performing uranoplasty by this plan, I determined to abandon the use of the *chisel* and employ the *saw* for the purpose of dividing the bone. In February of this year I employed it for the first time, and with complete success. With this instrument the section of the bone is accurately and rapidly made. The bone is not splintered, the segments being separated *entire*, and the laceration of the soft structures is very slight.

I have found the saw devised by Mr. Adams for section of the femur to be well adapted for the purpose. In using it, a small incision is made in the soft palate at the line of attachment to the hard palate, the saw is introduced, and the bone is divided from behind forwards, care being taken to follow the line of incision previously made through the soft structures, mucous membrane and periosteum, covering the hard palate.

The spaces left on each side are packed with lint, as suggested by Mr. Smith.

I venture to express the belief that the use of the saw in place of the chisel will perfect the method of operation suggested by the late Sir William Fergusson, and which is, without doubt, the best that can be employed for the relief of cleft of the hard palate.

Very respectfully, your obedient servant,

J. EWING MEARS, M.D.

Philadelphia, Pa., Oct. 21st, 1877.

Medical News.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—The following Members having passed the required examination on the 22nd, 23rd, and 24th ult., were, at a meeting of the Council on the 13th inst., duly admitted Fellows of the College:—

Amphlett, Edward, M.B., Leamington.
Archer, W. Gammon, M.B., Birmingham.
Cantlie, James, M.A. and M.B., Dufftown, Banffshire.
Clarke, J. St. Thomas, L.R.C.P. Lond., Leicester.
Dent, C. Thomas, Chesham-street.
Elliot, N. Bruce, L.R.C.P. Lond., Denmark-hill.
Harsant, W. Henry, L.S.A., Bristol.
Paley, W. Edmund, L.R.C.P. Lond., Peterborough.
Taylor, J. William, Birmingham.
Verco, J. Cooke, Adelaide, South Australia.

Three candidates failed to satisfy the Court of Examiners, and were referred for twelve months' further professional study.

UNIVERSITY OF LONDON.—The following candidates passed the recent B.S. Examination for Honours:—

Verco, Joseph Cooke, M.D. (Scholarship and Gold Medal), St. Bartholomew's Hospital.
Symonds, Charters James (Gold Medal), Guy's Hospital.

APOTHECARIES' HALL.—The following gentlemen passed their examination in the Science and Practice of Medicine and received certificates to practise on Dec. 6th:—

Colmer, Ptolemy Samuel Henry, Yeovil, Somerset.
Fox, Joseph Tregellas, Lordship-road, Stoke Newington.
Hall, John Lees, Porchester-gate, Hyde-park.
Hope, Robert Charles, York-road, Lambeth.

The following gentleman also passed the Primary Professional Examination:—

Walter, William Henry, St. Bartholomew's Hospital.

VACCINATION GRANT.—Mr. Arthur G. Evans, Towcester, has for the second time received from the Local Government Board a gratuity of £11 13s. for the successful performance of vaccination in his district.

DUBLIN ORTHOPÆDIC HOSPITAL.—Her Grace the Duchess of Marlborough visited this institution last week, and, in reply to an address presented to her, assured the committee of her continued interest in the hospital, and expressed her approval of the comfort and cleanliness of the various wards.

WEST KENT MEDICO-CHIRURGICAL SOCIETY.—The third meeting of the 22nd session was held on Friday, December 7th, at the Royal Kent Dispensary, Greenwich-road, Mr. Johnson Smith (President) in the chair. Dr. John Carnow read an extremely interesting and practical paper on the Diagnosis and Treatment of Diseases induced by Alcohol. The next meeting will be held on Friday, Jan. 4th, when Dr. J. Milner Fothergill will read a paper on the Diseases which simulate Heart Disease.

THE ADELAIDE HOSPITAL, DUBLIN.—On Tuesday last the Marquis of Headfort laid the foundation stone of the Madeline Wing of this hospital. The new buildings, which will cost about £13,000, will give additional accommodation for 100 beds, and will include a fever hospital, several new wards, an operating theatre, &c. The arrangements of the new wards will include all modern improvements. Accommodation for nurses has been fully provided in the new wing, which must be a subject of congratulation to all interested in the working of the hospital.

BEQUESTS TO MEDICAL CHARITIES.—Mr. Daniel Inwood, of Binstead, bequeathed £1500 each to the Royal Hants County Hospital at Winchester, King's College Hospital, the Royal London Ophthalmic Hospital, and the Alton Cottage Hospital, the last bequest being conditional upon the name of the institution being changed to the Inwood's Cottage Hospital, and his executors being appointed life governors within twelve months after his decease. Mr. John Leschallas, of Page-green, bequeathed £500 each to the London Hospital, the City of London Hospital for Diseases of the Chest, the Brompton Hospital for Consumption, the Earlswood Asylum for Idiots, the Brompton Cancer Hospital, the Royal Hospital for Incurables at Putney, the City of London Truss Society, and St. Mark's Hospital.

Medical Appointments.

ANGELL, Mr. A., has been appointed Public Analyst for the Borough of Guildford, at £26 5s. per annum, and 2s. 6d. for each analysis and report.

ATKINSON, E. T., M.R.C.S.E., L.S.A.L., has been appointed Medical Officer for the Richmond Rural District of the Richmond Union, Yorkshire, vice R. Atkinson, M.R.C.S.E., L.S.A.L., resigned.

BAKER, F. G., M.R.C.S.E., has been appointed Junior House-Surgeon to the Borough Hospital, Birkenhead, vice Glyn, deceased.

BOTT, H., M.R.C.S.E., L.R.C.P.L., has been appointed Registrar and Chloroformist to the Evelina Hospital for Sick Children, vice Hayward, resigned.

CUBROS, A. L., M.B., C.M., has been appointed Medical Officer and Public Vaccinator for the Parish of Kirkcaldy, Fifeshire, vice Morison, deceased.

DAVIS, E. W. S., M.R.C.S.E., L.S.A.L., has been reappointed Medical Officer of Health for the Mountain-Ash Urban Sanitary District, at £40 per annum for five years.

DAVIS, H., L.R.C.P.L., M.R.C.S.E., L.S.A.L., has been appointed Medical Officer and Public Vaccinator for the No. 5 or Stoke-Climsland District of the Launceston Union, vice Brown, resigned and since deceased.

EVANS, T., M.D., L.R.C.S.Ed. & L.M., has been reappointed Medical Officer of Health for the New-Quay Urban Sanitary District, Cardiganshire.

EWART, J., M.R.C.S.E., has been appointed Medical Officer of Health for the Accrington Urban Sanitary District, vice Booth, whose appointment has expired.

FISHER, G., L.R.C.P.Ed. & L.M., M.R.C.S.E., has been appointed Medical Officer to Court No. 5130 of the Ancient Order of Foresters at Felday, vice Capron, and Medical Officer to the newly-formed Sick Club at Gomshall.

HAMMOND, R. E., L.R.C.P.L., M.R.C.S.E., has been reappointed Medical Officer of Health for the Gorton Urban Sanitary District, Lancashire.

HARDING, W. H., L.K.Q.C.P.I., M.R.C.S.E., has been appointed Medical Officer and Public Vaccinator for the Biddenden and Halden Districts of the Tenterden Union, Kent, vice Paterson, resigned.

HAWTHORN, W. T., M.R.C.S.E., L.S.A.L., has been appointed Medical Officer and Public Vaccinator for the Northern No. 1 District of the Wellington Union, Salop, vice Morgan, resigned.

HELME, J. M., M.B., C.M., has been appointed a House-Surgeon to the Royal Southern Hospital, Liverpool, vice Roughton, resigned.

HUGHES, H. R. G., L.R.C.P.Ed., M.R.C.S.E., has been appointed a Certifying Factory Surgeon for the District of Bangor.

ILES, F. H. W., M.D., M.R.C.S.E., L.M., L.S.A., has been appointed an additional Medical Officer to the New West Herts Infirmary, Hemel Hempsted.

LOE, J. S., M.R.C.S.E., L.S.A.L., has been appointed Medical Officer and Public Vaccinator for the No. 5 District of the Leeds Union, vice Hopkins, appointed to No. 1 District, at £120 per annum and fees.

LOWE, H. G., M.R.C.S.E., has been appointed Resident Registrar and Pathologist to the General Hospital, Birmingham, vice Saundby, appointed an Assistant-Physician.

MALET, H., M.B., C.M., has been appointed Resident Medical Officer to the General Hospital, Birmingham, vice Bindley, appointed an Assistant-Physician.

MILLIGAN, W., L.R.C.P.Ed., M.R.C.S.E., L.S.A.L., has been appointed Medical Officer of Health for the Wirksworth Urban Sanitary District, Derbyshire.

NORMAN, G. A., M.B., L.R.C.P.Ed., L.R.C.S.Ed., has been appointed Medical Officer and Public Vaccinator for the Lonsford District of the Aahborne Union, vice Maclean, whose appointment has expired.

SMITHIES, J. J., L.F.P.S.G., L.R.C.P.Ed., has been appointed Medical Officer and Public Vaccinator for the Clitheroe District of the Clitheroe Union, Lancashire, vice Musson, resigned, at £30 per annum and fees.

STEES, W., L.R.C.P.Ed. & L.M., M.R.C.S.E., has been appointed Medical Officer and Public Vaccinator for the Mexbrough District of the Doncaster Union, vice Burman, deceased.

Births, Marriages, and Deaths.

BIRTHS.

DE BRENT.—On the 8th inst., at Church House, Aveley, Essex, the wife of Mortimer De Brent, M.R.C.S.E., L.S.A.L., of a son.

DYER.—On the 9th inst., at Ringwood, Hants, the wife of Dr. H. Geary Dyer, of a daughter.

FAWCETT.—On the 4th inst., at Newcastle-on-Tyne, the wife of William James Fawcett, M.B., Surgeon, Army, of a daughter.

GOWERS.—On the 10th inst., at Queen Anne-street, the wife of W. R. Gowers, M.D., of a daughter.

HILL.—On the 9th inst., at West Cromwell-road, the wife of T. Wood Hill, L.R.C.P.Ed., of a son.

ROBINSON.—On the 7th inst., at Mysore, Madras, the wife of Mark Robinson, L.R.C.P.L., Surgeon, Madras Army, of a daughter.

STARTIN.—On the 7th inst., the wife of James Startin, M.R.C.S.E., of Sackville-street, and Higham House, Well-street, of a daughter.

STEWART.—On the 3rd inst., at Charlotte-square, Edinburgh, the wife of T. Grainger Stewart, M.D., of a son.

MARRIAGES.

HARRIES—BENSON.—On the 5th inst., at St. Luke's, Chelsea, Thomas Davies Harries, F.R.C.S.E., to Annette, daughter of the late S. Benson, Esq.

MCINTYRE—SEYMOUR.—On the 4th inst., at the Parish Church, Odiham, William McIntyre, L.R.C.P.Ed., to Emma, daughter of the late John Grove Seymour, Esq.

DEATHS.

BLAKELEY.—On the 6th inst., at Brighton, Thomas Blakeley, M.D., aged 54.

BOOTH.—On the 27th ult., at Alderley, Cheshire, Byron Booth, M.R.C.S.E., aged 59.

BROSTER.—On the 3rd inst., at Topsham, Richard William Broster, M.R.C.S.E., aged 51.

COOKE.—On the 3rd inst., at Over, Cheshire, James Cooke, L.K.Q.C.P.I., aged 36.

DEAN.—On the 9th inst., at Upper Norwood, Peter Thomas Dean, L.R.C.P.Ed., aged 44.

DUNCAN.—On the 10th inst., at Wardie-road, Edinburgh, Alexander Campbell Duncan, M.D., late of the Indian Medical Service.

EVANS.—On the 10th inst., at St. Leonard's, Herbert Norman Evans, M.D., late of Hampstead, aged 75.

GAINE.—On the 7th inst., at Edgar-buildings, Bath, Adèle Brydges, the beloved wife of Charles Gaine, M.R.C.S., aged 31.

LAWRENCE.—On the 6th inst., at Adelaide-road, Regent's-park, Leonard Aust Lawrence, M.R.C.S.E., aged 64.

MCCREERY.—On the 5th inst., at Hartest, Bury St. Edmunds, John McCreery, L.K.Q.C.P.I., aged 25.

MALTON.—On the 8th inst., at Ramsgate, Charles James Abernethy Malton, F.R.C.S.E., aged 64.

MOOR.—On the 4th inst., at Leyton, Essex, Alfred Moor, L.R.C.P.L., aged 37.

SMITH.—On the 3rd inst., at Sedgley, John Smith, M.R.C.S.E., aged 46.

STARLING.—On the 3rd inst., at Brighton, Thomas John Starling, F.R.C.S.E., of Higham Ferrers, aged 67.

TRENCH.—On the 5th inst., at Bedford-street, Liverpool, William Stewart Trench, M.D., aged 68.

WARD.—On the 11th inst., at West Brompton, Tilleard William, youngest surviving son of the late Dr. Martindale Ward, of Chelsea, aged 24.

WESTROPP.—On the 5th inst., at George-street, Limerick, William Westropp, M.D., aged 73.

[N.B.—*A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.*]

BOOKS ETC. RECEIVED.

Transactions of the Medical Society of the State of Pennsylvania. Vol. XI., Part II.
Transactions of the Pathological Society of London. Vol. XXVIII.
Dr. C. Binz: The Elements of Therapeutics.
British Almanac and Companion. 1878.
Macmillan's Magazine. December.
The Contemporary Review. December.
The Practitioner.
The Australian Practitioner.
The American Practitioner.
W. Stokes: Records of Operative Surgery.
R. C. Jebb: Greek Literature.
Dr. Anstie on the Uses of Wines in Health and Disease.
T. H. Huxley on Physiography.
Dr. F. Bateman: Darwinism Tested by Language.
The Archer.
Dr. J. Ott: The Action of Medicines.
Dr. Arthur Chervin: Statistique du Mouvement de la Population en Espagne.
Dr. Neale: The Medical Digest.
The Monthly Microscopical Journal.
Chambers's Journal.

Notes, Short Comments, and Answers to Correspondents.

THE PROVIDENT SYSTEM IN COVENTRY, SALISBURY, AND OTHER PLACES.

WEEK by week we receive newspapers with very important discussions of the provident principle. We have reports before us of such discussions in Coventry, in Salisbury, and in Plymouth. Taken together these discussions show that the provident principle is steadily growing in force, and attracting the attention of those who are able to influence the charitable public. We cannot but be struck by the ability with which the subject has been put before the public in the above towns by Mr. Moore, of Coventry; Dr. Roberts, of Salisbury; and Mr. Alger, of Plymouth. Mr. Moore wished to carry a resolution in favour of such an alteration in the infirmary rules as would subject out-patients to an inquiry as to their fitness to receive charitable relief. Such an alteration had been unanimously recommended by a Committee appointed for the purpose; but it was too much for the subscribers. They thought their rights in danger, and the attempt was for the present unsuccessful. We say for the present, for it is evident the infirmaries, in their own interest, will have to protect themselves against abuse. The public will not long resist such statements as are now being made to them in support of the provident principle in medical charity, and they will be very apt to withdraw their subscriptions from hospitals to provident dispensaries, unless hospitals recognise the propriety of protecting themselves from abuse, and put themselves into harmony with the feeling in favour of providence and independence. Dr. Roberts's speech at Salisbury, as Dr. Lush said, was most effective. It was especially so where he showed of what development and adaptation the provident dispensary admitted in the way of providing the best advice, skilled nursing, and good medicines for the working classes on terms consistent with their independence. What is especially satisfactory, he was supported by canons and others, who are likely to work for all that is good in both the old system and the new of medical relief.

An Old Subscriber.—MacLaren, published by Macmillan and Co.

"STATUS OF MEDICAL OFFICER'S DEPUTY."

To the Editor of THE LANCET.

SIR,—As a member of the Board of Guardians of the Edmonton Union, referred to in a letter which I see inserted in your number for the 17th November from your correspondent, Mr. Collyer, of Enfield, I cannot help expressing my opinion that it would have been better if Mr. Collyer had stated all the facts, instead of misleading you as to one material to his case. Mr. Collyer speaks of his "deputy." The guardians know of no such officer in connexion with Mr. Collyer, and have only dealt with his "substitute" named by him, pursuant to article 200 of the Consolidated Orders of the Local Government Board, and whom the Board of Guardians did *not dismiss*, having no power to do so. All they actually did was to disapprove of the gentleman in question continuing to act as Mr. Collyer's substitute, in doing which they felt fully justified in the circumstances. The use of the term "deputy" implies the appointment by the guardians of an officer receiving from them compensation for his services, and is calculated to form in the minds of your readers a perfectly different impression than the facts above stated are likely to convey.

I am, Sir, yours truly,
Enfield, Middlesex, Dec. 8th, 1877. PETER RUMNEY.

"HYDROPHOBIA" IN THE HORSE.

A CASE of "hydrophobia," probably rabies, in the horse is reported to have occurred at Chard, Somerset. The animal presented the characteristic symptoms, and is believed to have been bitten by a dog, which was shot for biting another dog. It is not clear whether these animals developed the disease, nor is the presence or absence of *hydrophobia* as a symptom defined in the case of the horse. It would be interesting to have the facts fully described—in connexion with the exclusively vegetable-feeders more especially.

Mr. R. Rumney.—We cannot reproduce the letter.

THE WARREN PRIZE.

THIS prize, established in the United States with the aim of stimulating original research in medical science, seems to be in a fair way of realising the hopes of its founders. The Committee, consisting of the physicians and surgeons of the Massachusetts General Hospital, have awarded the prize of the present year, amounting to 371 dollars, to Dr. E. O. Shakespeare, of Philadelphia, for an essay on the Healing of Arteries after Ligation. This being but the second award since the establishment of the prize, it is gratifying to learn that the number of competitors was large, and that the essays were of considerable merit, and ranged over a wide area of investigation. The subject for 1880 (when the next prize will be awarded, the value of which will be 400 dollars) is announced as "Original Observations in Physiology, Surgery, and Pathological Anatomy." Competition is open, we believe, to medical men in all parts of the world. Essays should be forwarded to the resident physician of the Massachusetts General Hospital, Boston, on or before Feb. 1st, 1880.

A Constant Reader and Subscriber.—1. Bentley's or Balfour's Manual.—2. Huxley's Classification; Nicholson's Advanced Text-book.—3. Huxley and Martin's Practical Instruction in Elementary Biology; Rolleston's Types of Animal Life.

Mr. Samuel Smith's paper is marked for insertion.

HYDROPHOBIA.

To the Editor of THE LANCET.

SIR,—Now that hydrophobia in every aspect, both as regards its pathological action and its treatment, is occupying the attention of the profession and exciting the alarm of the public from its fatal effects, after reading week after week in THE LANCET, and in the press generally, opinions as to its cause, effects, and treatment, with your permission I will add my mite of experience, which may tend to throw a glimpse of light on the subject, and will at all events have the merit of novelty.

I have not yet had the misfortune to see a case of hydrophobia; but from what I can gather of the symptoms from authorities and from the very graphic description of symptoms given by Mr. Moore in THE LANCET a few weeks ago of a case lately under the care of Dr. Fenwick in the London Hospital, I am inclined to think that the disease is very much allied to traumatic tetanus.

We as a profession must unhesitatingly confess that we know nothing definite of the pathology of hydrophobia, and its treatment baffles our curative resources. If then this be admitted, any treatment, however severe, which does not lead to instant death is admissible.

Sixteen years ago I was practising in the West Indies, and during my sojourn there for eight years I had two cases of traumatic tetanus under my care, one of which I cured entirely; the other (a boy under fourteen years) was entirely relieved of the spasms, but lingered a few days after they had ceased, dying from other causes. The treatment in both cases was by bleeding from the arm to syncope. The rigidity and opisthotonos of the body in the adult case were so great that she was taken out of bed, and placed against the wall of the room. The arm required no ligature, as the veins were quite prominent. I then proceeded to bleed her to the extent of a full hand-basin of blood (about six pints); and whilst the nurse and spectators looked with alarm at such a quantity of blood being taken at once from a human body, poor Daphne (for that was the woman's name) fell swooning from her oblique position in as flaccid a condition as a silk handkerchief would fall from one's hand. In point of fact, the severe opisthotonos was instantaneously removed, and the flaccidity which ensued was so great that it was remarked at the time that knots could be tied with her legs. The spasms did not recur, and as soon as syncope took place I gave her a tumblerful of good sherry wine, which she had no difficulty in swallowing. She took beef-tea, brandy, and other nourishment readily, and in a few days was quite well. I shall not presume to give a definite account of the *rationale* of the treatment, but venture to state it as my opinion that bleeding the patient to syncope overcame the morbid condition of the spinal cord, and that the stimulant after treatment set up a new action.

Hence, since hydrophobia strongly resembles traumatic tetanus in its symptoms, and also in its pathology as far as is known, the same treatment might perhaps not be deemed inadmissible in both diseases, but the bleeding must be strictly to syncope.

I should be willing to travel many miles to witness a case of hydrophobia should any of my professional brethren give me an opportunity of doing so by telegram or otherwise.

I am, Sir, your obedient servant,
RICHD. SWEETING, M.D., &c.
Lorano-Atkin's-road, Clapham-park, Nov. 30th, 1877.

ARMY VETERINARY SURGEONS.

THE position of the army "vet" is, we are glad to see, in course of some amelioration. After being treated with much neglect for many years, inducements are now being held out to secure his attachment to the service, and efforts made to render his life smoother. It is a hopeful sign to find that two prizes, of the value respectively of 200 and 100 rupees, are offered to veterinary surgeons in India for the two most practical and original papers on the following subjects:—1. Good and Bad Stable Management of Troop Horses in India. 2. The Diseases and Accidents to which Troop Horses in India are liable from Irregularities of Digestion; their Direct and Indirect Causes, and the best available means of preventing them. It is added, "All details to be based upon the recognised laws of physiology and chemistry."

"MOTIVES FOR MUTILATION."

WE reproduce the following hideous paragraph from *The Times*:—

"The price of a human jaw at the seat of war in Bulgaria is 10*l.*, more or less. It varies according to the regularity, soundness, and whiteness of the teeth. In Paris the quotation is 50 per cent. greater at wholesale rates. The ghastly wares are conveyed in cases containing 500, and the teeth are extracted after their arrival at the city to which the jaws are consigned."

YELLOW FEVER.

A FEW particulars of the late epidemic of yellow fever in Savannah, Georgia, gleaned from a pamphlet published by Dr. O. A. White, will prove interesting to many of our readers, especially those who are in the public services or resident in the tropics. Savannah is a town with an estimated population of nearly 19,000, more than half of whom are coloured. It is situated in lat. 32°5′ N., and is surrounded on every side by vast lowlands, which, according to Dr. White, "require unremitting attention to prevent them from lapsing into septic sources of miasmatic emanations." The epidemic is ascribed by Dr. White to "three factors—ochlesis, koinomiasm, and the specific germinal poison of yellow fever." Within three months 1574 persons died in the town of yellow fever. One remarkable symptom presented itself in two cases—viz., total blindness, with dilatation of the pupils. The treatment pursued, and with considerable success, may be thus briefly summarised: A powder, consisting of ten grains each of calomel and carbonate of soda, with twenty grains of quinine, was at once administered, which had the effect of diminishing the rate of the pulse without producing hypercatharsis; afterwards ten grains of quinine every two hours during the persistence of the first stage, or only discontinued when the temperature markedly declined. Opium in any of its forms was never given until convalescence was fully established and the ammonia compounds were found useless. Blisters were frequently employed with unfailing advantage; "the slightest tenderness on pressure over the epigastrium after the first thirty-six hours was looked upon as a definite cause for the immediate application of a blister over the entire abdomen." Stimulants were given pretty freely throughout; while milk was forbidden on account of disagreeing with the patient, even when combined with lime-water. It is to be hoped that Savannah will not again receive such a visitation of yellow fever.

Mr. H. R. Ruckley.—Huxley's Anatomy of Vertebrated Animals; Huxley's Anatomy of Invertebrated Animals; Rolleston's Types of Animal Life; Owen's Lectures on Comparative Anatomy; Gegenbaur's Grundriss der Vergleichenden Anatomie.

F. H. W. T.—We cannot pursue the subject of this communication further.

INTERNAL URETHROTOMY.

To the Editor of THE LANCET.

SIR,—IN THE LANCET for November 25th was described an operation for cutting stricture, performed on Nov. 18th in University College Hospital by Mr. Lund, of Manchester, at my invitation. Probably some details of this operation may interest your readers.

The patient was a healthy man, thirty-two years old, sent to me for treatment by my friend Dr. Finch, of Colchester. His urethra before operation admitted No. 22 of the French scale (No. 13 English) bullet sound for half an inch. Thence downwards No. 16 (No. 8 English) passed for two inches. From that point to four and a half inches, No. 10 (No. 4 English) could be passed. There it was stopped by a stricture through which No. 2 (No. ¼ English) flexible bougie could reach the bladder. The patient had no pain or irritation of the urethra. Urine escaped in a fine stream; was clear, acid; specific gravity 1020; free from albumen.

On Nov. 18th, when the patient had lain quietly in bed for two days, Mr. Lund operated. He first passed a silkworm gut bougie through the stricture. To this he screwed on a fine silver catheter, which, guided by the bougie, was pushed into the bladder. Over this catheter larger tubes were thrust by Mr. Wakley's method until the fine stricture was widened to the calibre of No. 4 English catheter. He then withdrew tubes, catheter, and guide-bougie, and passed a second flexible bougie, rather larger than the first, using this as a guide for the hollow staff of Maisonneuve's urethrotome, which was similarly carried to the bladder. Urine was then drawn by an exhausting syringe along the hollow staff, in order to put the presence of the staff in the bladder beyond doubt. When ether had been given, Maisonneuve's knife, protected by the guard which Mr. Teevan has added to it, was passed along the staff, and the roof of the urethra so incised or scored that a bellied sound with tapering beak and bulbous point, measuring twenty-five millimetres at its thickest part (equal to No. 14 or No. 15 English), could be passed with some force into the bladder. The urine was drawn off by a No. 14 silver catheter, but no instrument was left in the urethra. Not more than a drachm of blood was lost at the operation. The patient was directed to be perfectly quiet, and not to pass urine for at least six hours. When these six hours had elapsed, the patient took two grains of quinine every two hours for twenty-four hours; then every three hours, every four hours, and every six hours in the three subsequent periods of twenty-four hours. During this time the patient remained in bed, having spoon diet only. The first urine passed was moderately discoloured by blood; but after that the urine was, to the naked eye, free from blood. The only pain was moderate soreness after each micturition. The temperature, taken every four hours until 11 A.M. of the 19th, remained normal. At 3.40 P.M. of that day, though the patient declared himself perfectly comfortable, the thermometer showed him to be 100° F. Thenceforth the temperature gradually rose till 1 A.M. of the 20th of November, when the thermometer registered 103·6° F. In this period the patient had no shiver, though he felt chilly on two occasions. As had been directed by Mr. Lund, should rigor occur, an ounce of brandy and half a drachm of laudanum in hot water was given. Then the temperature fell slowly, reaching normal range on the 23rd of November. Mr. Lund had requested that no instrument whatever should be passed until the 22nd or 23rd, when his No. 14 bellied sound should be used. At 3.15 P.M. of the 23rd this sound was passed without pain to the patient, but causing a few drops of blood to flow as the sound was withdrawn. At 7 P.M. the temperature was 98·4° F., and micturition was followed by slight smarting. At 10 P.M. a distinct shiver occurred, and the thermometer showed 104° F. The brandy and opium and bi-horal dose of quinine were repeated. The temperature fell slowly to normal on the 24th November, and remained so until the patient left the hospital on the 29th November. It was very important to the patient not to be delayed in his return home; therefore on the 27th, instead of Mr. Lund's sound, I passed a flexible bougie equal to No. 12 English. This caused no disturbance, and the patient has passed it himself without bleeding or soreness under Dr. Finch's superintendence since his return home.

The pleasant duty now falls upon me of acknowledging most gratefully our sense of Mr. Lund's kindness in coming to London, at great inconvenience to himself, for the sole purpose of demonstrating to us at University College Hospital his method of incising strictures. This opportunity of watching his skilful manipulation, and noting the many little expedients and resources which he employs to ensure a successful result, was very valuable. His patient dexterity and extreme lightness of hand showed how much may be accomplished without pain to the patient in overcoming the difficulties which arise when passing instruments through very narrow or tortuous strictures. Indeed watching Mr. Lund exploring the urethra brought old Isaak Walton's precept forcibly to mind, "When getting your worm on the hook, handle him as if you loved him." This practical skill on Mr. Lund's part is, doubtless, an important factor in producing a favourable issue to the operation.

Agreeing as I most cordially do in Mr. Lund's opinion, that internal urethrotomy must be looked upon as an exceptional mode of treatment of stricture, and never an habitual one, I have noted the history of this case minutely, because it shows, as I think, how closely even the most carefully practised incisions in the urethra touch upon danger. The patient was well suited to undergo operation; the necessary manipulations were conducted with due caution, and the after-treatment, carefully directed by Mr. Lund himself, was most zealously carried out by my house-surgeon, Mr. Gabb. The result was excellent in this instance; but in the course of the case the reaction was much greater than desirable. Probably the position of the incision had much to do with the reaction. There can be no doubt but that the incisions which are employed to divide strictured urethræ would be followed by disastrous consequences if practised upon the normal urethra. Highly vascular structures would be laid bare to urinary infiltration, and suppuration with septic absorption would often follow such wounds, as they do occasionally incision of the callous strictured urethra. Hence the knife should be applied where that callous fibrous tissue is developed most abundantly; that is, into the floor rather than through the roof into the corpora cavernosa, which are seldom so much affected by chronic fibrous degenerations as is the corpus spongiosum. Thus, notwithstanding the small loss of blood which followed the cut, at least four inches long in the case just related, important structures were injured, and the risk of serious consequences incurred. A second objection is that the knife of Maisonneuve's instrument is ill-adapted for its purpose. This is proved by the fact that the operator finds it necessary to give the stricture a preliminary stretch to get his knife through at all; and secondly, by his pushing a conical sound, as a wedge, through the cut to split across the fibres which the sharp edge has failed to sever. This sharp edge projects for half an inch beyond the staff, and thus in the less indurated parts of the passage is liable to cut far more deeply than is safe or desirable. The high projection of the blade is needed to obtain even tolerably perfect division of the fibres; for, as it proceeds down the urethra, the slack bands recede or stretch before the knife without being thoroughly divided, and thus the splitting action of the big sound is needed to complete what the knife has left undone. If the stricture tissue is held tense when the sharp edge attacks it, a much less prominent knife than that of Maisonneuve will divide the contracted fibres thoroughly. The ease with which the strands of a tightly-stretched cord are divided by even a blunt knife, compared with the hacking the same cord requires to cut it through when it hangs in a slack loop, properly illustrates the necessity for firmly fixing the unyielding fibres of the stricture before the cutting edge reaches them. This Maisonneuve's urethrotome fails to do. The position chosen for the incision, and the cumbrous mode of effecting the division of the stricture, are the main objections to Maisonneuve's instrument.

I am, Sir, yours &c.,

December, 1877. BERKELEY HILL.

Mr. Edward Williams.—A. B. acted with perfect propriety. If C. D. knew the circumstances, and knew that a homœopath was in attendance, as we gather from the statement sent us he did know, he acted in a way that will not bear reflection or justification.

Mr. Smith.—We are indebted for our correspondent's kind letter, and shall be glad to have the contributions to which he refers. It is always pleasant to revive agreeable associations.

Dr. Daniell.—The principle involved is important; but we doubt the expediency of noticing the case in connexion with which it is raised.

An Old Subscriber can, without doubt, obtain the desired information at the Emigration Office, 8, Park-street, Westminster, S.W.

CONSULTANTS, PROVIDENT DISPENSARIES, ETC.

To the Editor of THE LANCET.

SIR,—A considerable amount of interest is just now being shown by the profession on the subject of consultants accepting small fees, provident dispensaries, club practice, &c., and it may not be uninteresting if I tell you how we manage some of these matters in this part of the world.

In this city there is an institution called a "Mutual Assurance and Friendly Society for Health and Life Assurance and Medical Attendance." The amount paid for "medical advice and attendance to the members subscribing, their wives, and such of their children as are under fourteen years of age," is about *four shillings and eightpence* per annum for each family. This is not a very munificent sum; but you will be surprised to hear that the medical attendant to this Society is, to give him all his titles, a Doctor of Medicine, Doctor of Laws, and Fellow of the Royal Society, all of Edinburgh; an Honorary Member of the Clinical Society of London, a Professor of Surgery in one of our Scotch Universities, and a Surgeon of distinction in Scotland. I may also say that he may be considered a leading consulting physician and surgeon in the north.

Now, Sir, I am a poor general practitioner, and you will easily understand that when I send in my modest bill for medical attendance I would often be met with grumbling at the amount (small enough in all conscience), and a gentle hint that for a much smaller sum in the above Society the eminent services of a Court surgeon can be obtained.

Comment on the above bare statement of facts is superfluous, and I can only express my satisfaction that I am able to sign myself,

Your obedient servant,

November, 1877. CLUB DOCTOR.

"INFECTIOUS PAUPERS" OUTSIDE THE METROPOLITAN AREA.

THE managers of the Metropolitan Asylum District complain that several unions and sanitary authorities outside the metropolitan area are constantly sending fever and small-pox cases to the hospitals of the managers, and have now requested the Local Government Board to point out to these authorities not only the illegality of such a course of procedure, but also the risk they run in finding the hospitals full, and so unable to admit such patients. The managers further complain that they experience great difficulty in obtaining payment of the expenses incurred in the maintenance of the patients so sent. The Asylums Board are quite within their rights in this matter. By refusing to receive patients from outside unions, they would compel the latter bodies to do their duty in epidemic times—that is, provide small cottage hospitals, where infectious patients of the pauper class would be isolated and treated. Thus, removal to a small-pox and fever hospital in London—a journey dangerous alike to the patient and public—would be obviated.

Mr. Thos. Redfern.—We are obliged for the communication, but have no space to publish it.

L.R.C.S.I.—We cannot comment on the case.

ACUTE RHEUMATISM TREATED BY SALICYLATE OF SODA; HYPERPYREXIA; DEATH.

To the Editor of THE LANCET.

SIR,—I offer the following case as a contribution to the above subject.

T. G——, a mechanic, aged thirty-three years, came home from his work on the evening of November 14th, complaining of pains all over his body. He remained at home next day, and I was called to see him on the 16th. He was then suffering from pains in his wrists and knees, feverish, and sour-smelling perspiration. I ordered him to be bedded in blankets, and put on alkalies and Dover's powder.

Nov. 17th.—I changed his treatment to twenty-grain doses of salicylate of soda.

18th.—Restless; temperature 103·5°; pulse 120; præcordial pain; has old mitral murmur.

19th.—The same, but slightly delirious.

20th.—Had not rambled so much, but complained of his cough keeping him awake. At 7.30 P.M. his temperature was 103·2°; pulse 130; quite rational; not much pain anywhere; skin not so moist. He was still continuing the poultices ordered on the 18th over the heart; he had also continued the salicylate. At 10.30 P.M. I was summoned in great haste, with a message that he was dying. When I arrived I found him insensible, and not to be roused; pulse extremely rapid; temperature 108°. As there was no bath in the house, I dipped two sheets into cold water, and applied one, while the other was hung out of the window (it was a bitterly cold night), changing them frequently. After I had continued this for half an hour I found the temperature had risen to 110°. He died at 12 o'clock the same night.

From this case it appears: 1st. That valuable as salicylates are in reducing temperature, a sudden rise may ensue while taking them. 2nd. It shows one form in which hyperpyrexia comes on. The case was not markedly acute. He could move his limbs about, though they were painful; the sweating, tolerably free at first, became less so. There was more rambling than is ordinarily met with in acute rheumatism, and the pulse was high throughout. When I saw him at 7.30 P.M. he appeared better; but the quick pulse and freedom from pain led me to give an unfavourable prognosis, which was unhappily confirmed by the sudden rise of heat and speedy death. The method of applying cold adopted in this case appears to me a very convenient one, much less troublesome than dipping the sheets into cold water and wringing them out each time a change is made, and does away with the slopping and mess inseparable from the latter plan, though it is by no means equal to the bath when it can be had.

I may say, in conclusion, that I treated him seven years ago during an attack of acute rheumatism by large doses of bicarbonate of potash. In this attack he had endocarditis, but recovered after some time sufficiently to consider himself a healthy man.

Yours &c.,

Patricroft, Nov. 26th, 1877. EDWIN H. ROE, M.R.C.S., &c.

"ALLEGED SUCCESSFUL TREATMENT OF HYDROPHOBIA."

THE absorbing interest felt on this subject is shown by the line taken by the lay papers, of which the following is a specimen taken from the *Family Herald*:—

"A correspondent who was in India some years back, when hydrophobia was very prevalent in that country, sends us the following cases which were successfully treated there by resident English medical men. One was that of a boy who was placed under the care of Dr. Wyllie at Ahmednuggur. The patient was seated on a cane-bottomed chair, naked; a pan of live charcoal was put underneath the chair, and all were enveloped in blankets, leaving the boy's head free. Mercury was now thrown over the charcoal. In a quarter of an hour saliva poured from his mouth and rigidity ceased. He lived, and so did many other patients treated in the same manner. The second case was under the care of Mr. Barnes, medical officer of the Charitable Dispensary, Hooshinpore. The patient was suffering from violent and frequent attacks. He was tied on a cane-bottomed chair, and surrounded with blankets, leaving the head free; a vessel of boiling water was placed under him, and a mixture of equal parts of mercury and sulphur well rubbed together was placed in a broken piece of earthenware over a charcoal fire, and put alongside the vessel of boiling water; fifteen grains of calomel were given at once, and five grains repeated every hour, the mercurial vapour-bath being kept up till the symptoms had subsided. In about four hours the man was perfectly calm. The after-treatment was tonics, nourishing food, and gargles to remove salivation. He was discharged cured."

Mr. C. R. Evans.—Dr. Smith's letter was *not* printed in THE LANCET, and the rejoinder arrived too late for publication.

Dr. J. de Courcy Morris.—We have no recollection of the letter; it has not been preserved.

Mr. Lee.—Declined with thanks.

Gamma.—The letter reads too much like an application for some lay person for advice. Our correspondent, being a medical man, should write as one, suggesting the points on which he desires help as topics of professional interest.

Two Surgeons.—We are unable to determine the precise nature of the growth from the section forwarded to us. Can our correspondents send us a larger portion of one of the tumours?

THE INDIAN MEDICAL SERVICE.

To the Editor of THE LANCET.

SIR,—Apropos of the letter signed "Gamma" in your issue of Sept. 15th. He says: "There are numbers of men still in the service who are members of the old Fund, which gives them an additional £400 or £500 on retiring. For these fortunate individuals, therefore, the pensions are ample."

I never can quite understand that peculiar frame of mind which strains at benefiting oneself by injuring others, the more if it does *not* help one's own cause. These "fortunate individuals" have all paid for, or are paying for, these additional incomes (which, by-the-by, are not £400 and £500 a year, but £200 and £400). The Madras Medical Fund was a sort of insurance fund, including a charity or family branch, raised amongst the medical officers of the old service to accelerate promotion and secure additional incomes on retirement; for already, years before "Gamma" had come into the service, the medical officers had found out that, to use "Gamma's" own words, the retiring pensions were "miserably insufficient." So well did these old officers manage this Fund that when the service was given over to the Crown and the Fund was abolished, the Government received £765,000 (over three-quarters of a million sterling) in hard cash to see the remaining officers out of their engagements. The officers then on the Fund still subscribe, and the Government guarantee them their annuities on retirement; but, of course, some day a very considerable sum of money—all subscribed by medical officers, remember—will accrue to the Crown.

I confess I do not see the thrift and honesty and good management of the officers of the past should prevent the Government doing an act of simple justice or even retard their doing it. The present retiring pensions are "miserably insufficient," and the more so for this Presidency of Madras, inasmuch as, unlike Bengal and Bombay, it contains no appointments bringing in large emoluments. In Bengal especially, and Bombay, I believe, a man may make a fortune, or add by practice very considerably to his income. In the Madras Presidency we have no large cities, such as Lucknow, Delhi, Calcutta, Allahabad, &c. What can induce a man to come out to this poverty-stricken Presidency, now that the Medical Fund is abolished, is more than I can understand? In the olden times Madras was always the last. Men, unless for family reasons, invariably chose Bengal or Bombay; but, if obliged to come to Madras, consoled themselves with the prospect of its capital Fund. Now "even that which it had is taken away," and Madras remains unquestionably a very melancholy, famine-stricken place to pass the best days of one's life in.

Yours &c.,

Madras, Oct. 29th, 1877. DELTA.

Mr. T. C. Walker.—Licences are rarely granted. Apply to Mr. John Birkett, the Provincial Inspector of Anatomy, or direct to the Home Secretary. The cost is about two and a half guineas.

SEQUELA OF VESICO-VAGINAL FISTULA.

To the Editor of THE LANCET.

SIR,—If any of your correspondents could help me in this case I should be very greatly obliged.

A patient of mine after her first confinement had a vesico-vaginal fistula, which after the lapse of a few months was treated by an operation, and the wound healed most satisfactorily; but since then she has had incontinence of urine. She does not yet seem to have recovered any power over the sphincter, and is perfectly unconscious of the urine escaping. She has had two children since the operation. Any suggestions will be thankfully acted on.

Yours &c.,

December, 1877. SCALPEL.

COMMUNICATIONS, LETTERS, &c., have been received from—Dr. Dickinson, London; Dr. J. Hughlings Jackson, London; Dr. Philipson, Newcastle-on-Tyne; Dr. D. Lloyd Roberts, Manchester; Mr. T. Holmes, London; Mr. Rushton Parker, Liverpool; Dr. Stephen Mackenzie, London; Dr. H. Monckton, Rugeley; Dr. W. Wadham, London; Mr. Gamgee, Birmingham; Dr. Julius Dreschfeld, Manchester; Dr. C. B. Taylor, Nottingham; Dr. J. P. Irvine, London; Dr. P. Tytler, Manchester; Mr. M. A. Adams, Maidstone; Dr. T. B. Peacock, London; Mr. Charles Williams, Norwich; Dr. J. H. Eddowes, Loughborough; Mr. A. Eddowes, Loughborough; Dr. R. H. Taylor, Liverpool; Dr. T. Savage, Birmingham; Mr. G. A. Sheppard, Worcester; Dr. Reginald Harrison, Liverpool; Mr. R. Hamilton, Liverpool; Mr. Louis King, Bath; Mr. R. Branwell, Richmond; Dr. J. O. Brookhouse, Nottingham; Dr. W. A. Ediston, Ipswich; Dr. D. Mackinder, Gainsborough; Mr. P. B. Mason, Burton-on-Trent; Dr. E. Malins, Birmingham; Dr. Walter Fergus, Marlborough; Mr. J. Davies, Oswestry; Mr. C. J. Cullingworth, Manchester; Dr. Robt. Macnab, Bury St. Edmunds; Dr. J. Thorburn, Manchester; Dr. T. Cole, Bath; Dr. J. Nicholls, Chelmsford; Mr. T. Cooke, London; Mr. Hime, Sheffield; Mr. R. Dawson, Brighton; Dr. J. H. Gramshaw, Gravesend; Mr. T. Walsh, Worcester; Dr. A. W. Fox, Bath; Dr. A. Hall, Brighton; Mr. M. Moore, Coventry; Dr. Strange, Worcester; Dr. G. Mundie, Eastbourne; Dr. J. S. Holden, Suffolk; Dr. H. O. Bowman, Sunderland; Dr. Wm. Murray, Newcastle-on-Tyne; Dr. J. W. Hamill, Worksop; Mr. W. Pratt, Newtown; Dr. P. R. Fairbank, Doncaster; Dr. W. Dale, King's Lynn; Dr. M. E. B. Oxley, Liverpool; Mr. T. Sympson, Lincoln; Dr. W. J. Tyson, Folkestone; Mr. S. Bennett, Penzance; Dr. J. Donnett, Cheltenham; Mr. S. M. Bradley, Manchester; Mr. H. E. Armstrong, Newcastle-on-Tyne; Mr. T. P. Smith, Shepton Mallet; Dr. M. Adam, Boston; Dr. D. Devereux, Tewkesbury; Dr. A. Fletcher, Bury; Dr. A. L. Owen, Southsea; Mr. E. A. Browne, Liverpool; Dr. J. Williams, London; Dr. S. Locke, Carlisle; Mr. Geo. Lawson, London; Dr. L. Shapter;

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LETTERS, *each with enclosure*, are also acknowledged from—Dr. Maguire, Stony Stratford; Dr. Bolton, Shotley Bridge; Mr. J. Startin, London; Dr. Hardwicke, Sheffield; Mr. Busk, Leicester; Mr. Harris, Hackney; Mr. Piggott, Earl Soham; Dr. Esbelby, Stonehouse; Mr. Macdonnell, Manchester; Dr. Davies, Wrexham; Mr. Oldman, Spalding; Mr. Evans; Mr. Walford, Ramsgate; Dr. Chervin, Paris; Dr. Fleming, Middleton; Mr. Simpson; Dr. Walker, Doncaster; Mr. Walters, Stroud; Mr. Creten, Birkenhead; Messrs. M'Gee, Belfast; Mr. Davidson, Glasgow; Messrs. Hartill, Willenhall; Mr. Sherrard; A. F. H.; Medicus, Durham; D. M.; Medicus, Norwood; Practitioner; L. M., Cuckfield; E. W. N.; O. P. Q.; Chemist; R. N., Birmingham; L. N.; B.; P. J. S., Poplar; Singleton; Zeta; R. L.; M. D.; Medicus, Winchester; E. D. G., Brixton; M. R., Richmond.

Accrington Times, Salisbury and Winchester Journal, Sunderland Daily Post, Night and Day, Bolton Chronicle, Gossips' Bowl, Carlisle Journal, Hornet, &c., have been received.

METEOROLOGICAL READINGS

(Taken daily at 8 a.m. by Stewart's Instruments.)

THE LANCET OFFICE, DEC. 13TH, 1877.

Date.	Barometer reduced to Sea Level, and 32° F.	Direction of Wind.	Wet Bulb.	Dry Bulb	Solar Radia. in Vacuo	Max. Temp. Shade	Min. Temp.	Rain-fall.	Remarks at 8.30 A.M.
Dec. 7	29·91	W.	41	43	...	50	41	0·06	Fine
,, 8	30·17	W.	38	40	...	48	37	0·13	Cloudy
,, 9	30·24	S.W.	45	48	...	50	37	...	Fine
,, 10	30·00	S.W.	36	37	...	41	35	...	Frost
,, 11	30·02	N.W.	35	36	...	50	34	...	Frost
,, 12	29·78	S.W.	49	50	...	52	34	0·07	Raining
,, 13	29·96	W.	37	39	...	...	37	0·06	Overcast

Medical Diary for the ensuing Week.

Monday, Dec. 17.

ROYAL LONDON OPHTHALMIC HOSPITAL, MOORFIELDS.—Operations, 10½ A.M. each day, and at the same hour.
ROYAL WESTMINSTER OPHTHALMIC HOSPITAL.—Operations, 1½ P.M. each day, and at the same hour.
ST. MARK'S HOSPITAL.—Operations, 9 A.M. and 2 P.M.
METROPOLITAN FREE HOSPITAL.—Operations, 2 P.M.
ROYAL ORTHOPÆDIC HOSPITAL.—Operations, 2 P.M.
MEDICAL SOCIETY OF LONDON.—8½ P.M. Dr. Andrew Clark, "On the Prognosis of certain forms of Heart Disease."

Tuesday, Dec. 18.

GUY'S HOSPITAL.—Operations, 1½ P.M., and on Friday at the same hour.
WESTMINSTER HOSPITAL.—Operations, 2 P.M.
NATIONAL ORTHOPÆDIC HOSPITAL.—Operations, 2 P.M.
WEST LONDON HOSPITAL.—Operations, 3 P.M.
PATHOLOGICAL SOCIETY OF LONDON.—8½ P.M. Prof. Lister, "On Lactic Fermentation, and its bearings on Pathology." Mr. Lister's Specimens will be ready for inspection at 8 P.M.

Wednesday, Dec. 19.

MIDDLESEX HOSPITAL.—Operations, 1 P.M.
ST. MARY'S HOSPITAL.—Operations, 1½ P.M.
ST. BARTHOLOMEW'S HOSPITAL.—Operations, 1½ P.M., and on Saturday at the same hour.
ST. THOMAS'S HOSPITAL.—Operations, 1½ P.M., and on Saturday at the same hour.
KING'S COLLEGE HOSPITAL.—Operations, 1½ P.M., and on Saturday at the same hour.
GREAT NORTHERN HOSPITAL.—Operations, 2 P.M.
UNIVERSITY COLLEGE HOSPITAL.—Operations, 2 P.M., and on Saturday at the same hour.
LONDON HOSPITAL.—Operations, 2 P.M.
SAMARITAN FREE HOSPITAL FOR WOMEN AND CHILDREN.—Operations, 2½ P.M.
ASSOCIATION OF SURGEONS PRACTISING DENTAL SURGERY.—8½ P.M.

Thursday, Dec. 20.

ST. GEORGE'S HOSPITAL.—Operations, 1 P.M.
ST. THOMAS'S HOSPITAL.—Ophthalmic Operations, 4 P.M.
CHARING-CROSS HOSPITAL.—Operations, 2 P.M.
CENTRAL LONDON OPHTHALMIC HOSPITAL.—Operations, 2 P.M., and on Friday at the same hour.
HARVEIAN SOCIETY.—8½ P.M. Second Harveian Lecture: Dr. Grally Hewitt, "On the Mechanical System of Uterine Pathology."

Friday, Dec. 21.

ST. GEORGE'S HOSPITAL.—Ophthalmic Operations, 1½ P.M.
ROYAL SOUTH LONDON OPHTHALMIC HOSPITAL.—Operations, 2 P.M.
MEDICAL MICROSCOPICAL SOCIETY.—8 P.M. Dr. Urban Pritchard, "On the Cochlea of the Ornithorhynchus."—Special Meeting to consider Mr. Golding Bird's Resolution.

Saturday, Dec. 22.

ROYAL FREE HOSPITAL.—Operations, 2 P.M.

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